The Croonian Lectures

ON

THE MEANS BY WHICH THE TEMPERATURE OF THE BODY IS MAINTAINED IN HEALTH AND DISEASE.

Delivered before the Royal College of Physicians of London, on June 15th, 17th, 24th, and 29th,

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LECTURE IV.[1]

Delivered on June 29th.

MR. PRESIDENT AND GENTLEMEN,—The third method which has been used in the study of the amount of heat produced under different conditions may be called the chemical. It need not detain us long, for the study of the chemistry of the heat-production of the body is so beset with difficulties that up to the present time not very much work has been done at this subject. There are two divisions of it—namely, the chemistry of the heat-production in the non-febrile and in the febrile states, and we will consider them in that order.

The breaking down of any chemically complex substance, such as a proteid or a fat, always leads to the liberation of energy. Various observers have, by burning these substances in a calorimeter, calculated the amount of heat set free by their destruction. In such a case the whole of the liberated energy appears as heat. Some of the most careful and recent results are Stohmann's.[2] His figures are gramme calories, and they represent the amount of heat necessary to raise one gramme of water from 17° to 18° C. They are shown in the following table.

TABLE XXVII.

—	Gramme calories.
The heat value of one gramme of most albumins is	5298 to 5941
The heat value of one gramme of meat is	8662
The heat value of one gramme of albuminoids is	4650 to 5961
The heat value of one gramme of chondrin is	5130
The heat value of one gramme of animal fat is	9609
The heat value of one gramme of olive oil is	9600
The heat value of one gramme of carbohydrates is	4381 to 3714
The heat value of one gramme of cane sugar is	3955

These figures are, as we shall see in a moment, of great value; but I need hardly remind you that we cannot calculate the heat production of an animal from its diet. In the first place we do not know what proportion of any meal is absorbed from the gastro-intestinal tract; secondly, not all the energy set free in the body is manifested as heat; some takes the form of mechanical work, and therefore in calculating the heat value of any particular diet we should have to deduct the energy which in the body takes the form of motion; but this is very difficult to estimate accurately, and therefore the deduction to be made from the total heat value of the food would be uncertain; and, thirdly, the food may be stored up in the body and not broken down for some time. The value of figures, like those of Stohmann, which show the amount of heat produced by the breaking down of the albumins and fats of the body lies in the fact that we can, by observing the amount of nitrogen and carbon excreted, calculate what must have been the amount of proteid and fat which had to be broken down to produce these amounts of nitrogen and carbon, and then, by looking at Stohmann table, we find how many calories the breaking down of these proteids and fats gave rise to. But in these calculations we must remember that although the fats are completely broken down yet the proteids are not. Nearly all the proteid is, however, broken down to urea and uric acid; the excretion of these can be measured and the number of calories resulting from their complete destruction estimated; if this is done and the calories of energy remaining in the urea and uric acid are deducted from those set free if a gramme of albumin is broken down as low as possible, we, of course, easily obtain the energy value to the body of a gramme of albumin, and this is found to be about 4000 gramme calories.

Rubner[3] has in animals, by careful analysis of the expired air, the urine, and the fæces, observed the amount of nitrogen and carbon excreted, from which he calculates the quantity of each in proteids and fats, which corresponds to such an amount of nitrogen and carbon. Then he compares the heat given off by the animal to an animal calorimeter with the heat that he would, from his knowledge of the number of calories set free by the breaking down of these quantities of proteids (after allowance for the urea and uric acid) and fats, expect to be produced by the animal during the time it was in the calorimeter. Table XXVIII. shows how the calories

TABLE XXVIII.

Diet.	Number of days.	Total of calculated heat.	Total of heat estimated by calorimeter.
Starving	5	1296·3	1305·2
	2	1091·2	1056·6
Fat	5	1510·1	1495·3
Meat and fat	8	2492·4	2488·0
	12	3985·4	3958·4
Meat	6	2249·8	2276·9
	7	4780·8	4769·3

reckoned by each method correspond. It gives in kilogramme calories the results of experiments on a small dog which was observed for five days starving, five days on a fat diet, eight on a diet of meat and fat, and six on meat; and on a big dog observed two days starving, twelve days on meat and fat, and seven on meat. Each twenty-four hours was observed separately, and the table gives the total results for each dog for each diet. Rubner's experiments are very carefully performed, and therefore we must all look forward with great interest to their confirmation. If they are confirmed they will prove that he has successfully overcome many great difficulties, and the agreement between his chemical and calorimetrical results will be remarkable, for, firstly, we have seen that animal calorimeters may be very inaccurate instruments and unless very carefully constructed will give rise to all sorts of errors. Secondly, the chemical method gives the heat produced, but the calorimeter only indicates that lost, and I have in the last lecture shown that we cannot infer quite accurately from that the amount produced by the animal, for we do not know whether during the experiment it varies its rate of loss, and, further, we cannot tell, unless we know the variations of its temperature during the twenty-four hours an experiment lasted, how much of its heat production has been expended in raising its temperature, and if any has been so used it would not be shown by the calorimeter. In these experiments the dissipation of energy as mechanical motion does not interfere with the results, for the animals keep quiet in a cage which just fits them; and, further, such mechanical work would tell equally in both sets of figures, as also would the work done by the heart and respiratory muscles, most of which work becomes heat as it has to overcome friction.

We now pass on to a consideration of the experiments in which an attempt has been made to calculate the heat production of starving animals suffering from fever by observing the amount of nitrogen and carbon excreted. It is always necessary to use starving animals, for it is well known that

[1] Lectures I., II., and III. were published in THE LANCET of June 19th and 26th and July 3rd respectively.

[2] Ueber den Wärmewerth der Bestandtheile der Nahrungsmittel, Zeitschrift für Biologie, Band xxxi., Heft 3, S. 364.

[3] Die Quelle der Thierischen Wärme, Zeitschrift für Biologie, 1893-94 Band xxx.

the ingestion of a meal increases the production of heat, as, indeed, the table just quoted from Rubner shows. This method can give us some idea of the chemical processes involved in fever, but in applying the results to man we must remember that as human patients are given food during a febrile illness, and as man has, by his sweating and hairless skin, far better means than the lower animals of varying his loss of heat, the processes may be somewhat different in man from the processes in a starving animal. By far the best experiments are those of May,[4] and I am the more disposed to quote some of his results as I found when Professor Burdon Sanderson's article on Fever in Professor Clifford Allbutt's System of Medicine appeared that the high opinion I had formed of their value was confirmed. May begins by giving a history of the subject, and comes to the conclusion that the balance of evidence is that in febrile pyrexia the respiratory quotient is unaltered, that the excretion of CO_2 is not much increased, and that the brunt of the destruction falls on the proteids. He used rabbits in whom he induced swine erysipelas. For some days before the production of this fever they were starved so as to get their excretion of urea steady, and during the fever May most carefully observed the output of nitrogen and carbon both in the urine and the breath for more than twenty hours at a time, and he calculated what must have been the original amount of proteid and fat tissue which would, when broken down, correspond to the nitrogen and carbon he found excreted. Using Stohmann's heat values of proteid and fat, he was able to estimate the number of calories which would be set free by the destruction of these amounts of proteids and fat. The following experiment may be quoted (Table XXIX.). It shows distinctly that when a starving

TABLE XXIX.

Day.	Mean weight of rabbit.	Temperature of rabbit.	Calories. Nitrogen.	Sugar.	Fat.	Total.	Per kilogramme of animal.	Remarks.
	Grms.	Deg. C.						
3	2832	38·5 39·2	47·56	—	106·1	152·66	53·8	—
4	2737	34·2 38·6	50·5	—	97·44	147·94	54·0	—
5	2632	38·6 39·6	54·25	—	91·55	145·80	55·4	—
6	2522	38·7 40·1	70·50	—	83·88	154·38	61·2	Fever
7	2384	40·1 38·1	64·75	—	99·87	164·62	69·1	Fever

rabbit is suffering from swine erysipelas there is an increased heat production, and that this is due entirely to an increased destruction of proteid.

The following table of the results obtained by experiment upon three starving rabbits shows very well also how strikingly the destruction falls upon the proteids (Table XXX.).

TABLE XXX.

——	Day of observation.	Calories. From nitrogenous substances.	From non-nitrogenous substances.	Remarks.
Rabbit E	3rd	18·0	44·0	
	4th	19·0	45·0	Fever began.
	5th	27·0	46·0	Fever.
Rabbit G	3rd	16·8	37·0	
	4th	18·5	35·6	
	5th	20·6	34·8	Fever began.
	6th	27·9	33·3	Fever.
Rabbit H	3rd	10·7	53·8	
	4th	10·4	53·7	
	5th	11·8	54·0	Fever began.

[4] Zeitschrift fur Biologie, Band xxx., S. 1.

May's next experiments are of the greatest interest to clinical physicians. He gave a starving rabbit a known quantity of grape sugar and made—both before and after the administration of the grape sugar—observations similar to those I have just described. After the observations the animal was immediately killed, and the glycogen in the body and the grape sugar in the urine, alimentary canal, and fæces were estimated, and from the figures obtained May was able to learn how much had been used in the body. The following table shows very well how the administration of sugar saves the destruction of albumin and fat which goes on in starvation (Table XXXI.).

TABLE XXXI.

Day.	Mean weight of animal.	Calories. Nitrogen.	Sugar.	Fat.	Total.	Per kilogramme of animal.	Remarks.
	Grammes						
4	2434	39·75	—	84·61	124·36	51·1	—
5	2394	30·00	92·93	—	122·93	51·3	Sugar given.

And the next table shows, too, how the administration of sugar effects a similar saving in fever (Table XXXII.).

TABLE XXXII.

Day.	Temperature of animal.	Mean weight of animal.	Calories. Nitrogen.	Sugar.	Fat.	Total.	Per kilogramme of animal.	Remarks.
	Deg. C.	Grms.						
4	39·5 40·4	2560	60·75	—	171·32	232·07	90·7	Fever
5	39·6 39·8	2462	32·25	94·56	45·17	171·98	70·0	Fever and sugar

Experimental medicine here shows strikingly why it is, as clinical medicine has found by experience, that milk and farinaceous diet is best for fever, and, further, as all May's experiments show conclusively that in starving rabbits suffering from swine erysipelas the heat production is increased, and that this increased production is due entirely to a greatly increased destruction of proteid, we are probably correct in concluding that in most fevers the greater part of any increased production of heat is due to an increased destruction of proteid rather than to an increased destruction of fats. It is true that May has not been able to allow for any energy which, resulting from the breaking down of tissue, manifested itself as mechanical work; but the increase of proteid destruction he found was so great that even if the fevered starving rabbit did a little more mechanical work than it did before the fever was induced the increased energy taking this form can have been only a small proportion of the whole energy resulting from the increased destruction of proteids. It is almost impossible to make any such observations on man, but some attempts have been made to find out whether in man the amount of CO_2 exhaled is increased during fever. Many more observations will have to be made on different fevers before the results can be accepted as final, but as far as they go they show that in man the amount of CO_2 excreted during fever is not increased. I will quote the results of two observers. Loewy[5] gives the following table of observations made on a case of typhoid fever (Table XXXIII.). It is noteworthy that not only is there no increase in the output of CO_2, but also that the respiratory quotient is low for man, whose normal is 0·8 or rather over this, although, according to May, the balance of evidence is that in fever it is unaltered.

Kraus[6] has also made a number of observations. He comes to the following conclusions: (1) That fever is possible when the oxidation processes (measured by determining the gaseous exchange) are not perceptibly increased,

[5] Virchow's Archiv, Band cxxvi., S. 218.
[6] Zeitschrift für Klinische Medicin, Band xviii., S. 160.

and this even during a long period in which the patient wastes; and (2) that the metabolic processes of fever do not markedly influence the respiratory quotient, which depends entirely on the condition of the patient. I ought to add that Zuntz in a communication made to the Berlin Physiological Society, showed that different men under the same conditions varied very much in the amount of oxygen inhaled and the amount of CO_2 exhaled. Loewy and Kraus were, however, aware of this.

My work in this direction has been slight, for the only experiments I have done relate to the gaseous exchange of rabbits in which pyrexia had been induced by cerebral lesions and that of hybernating dormice. Mr. Hopkins and I investigated the question of whether the output of CO_2 and and H_2O from the lungs was increased when pyrexia was induced by cerebral lesions. We used the differential calorimeter I have already described. The animal was shut in one chamber, no hydrogen was lit in the other chamber, but it was closed and an equal amount of air was drawn through each chamber. The outcoming air from each was passed through a pumice and sulphuric acid tube to absorb the water, then through a U tube containing pumice soaked in caustic potash, and then through two U tubes each containing dry caustic potash. The sulphuric acid tube was weighed before an experiment, and each set of three caustic potash tubes was also weighed, and the tubes were then again weighed after an experiment the duration of which was

TABLE XXXIII.

CO_2 output per minute in cubic centimetres.	O intake per minute cubic centimetres.	Respiratory quotient.	Body temperature.
			Deg. C.
183	280	0·653	38·3
221	265	0·853	39·3
190	279	0·682	39·5
205	291	0·706	39·8
198	320	0·620	39·7
248	323	0·706	39·2
277	325	0·851	Normal three weeks after last observation.

TABLE XXXIV.

Animal.	Date.	Hour.	Temperature of animal degrees F.	Grammes of CO_2 given off by the animal per hour.	Grammes of CO_2 in an amount of air equal to that breathed by the animal.	Grammes of H_2O given off by the animal per hour.	Grammes of H_2O in an amount of air equal to that breathed by the animal.	Remarks.
	1896							
Rabbit A	Feb. 25th	5 to 6 P.M.	100·8	2·945	0·85	1·19	0·61	—
	Feb. 26th	5 to 6 P.M.	100·8	3·26	1·01	1·34	1·21	—
	Feb. 27th	5 to 6 P.M.	99 8	2·64	0·21	1·25	1·30	6.30 P.M.: right corpus striatum punctured.
	Feb. 28th	10¾ to 11¼ A.M.	102·4	2·98	0·22	0·97	2·05	—
	March 2nd	5 to 6 P.M.	100·1	2·83	0·58	1·03	0·67	—
	March 3rd	10¾ to 11½ P.M.	101·3	2·97	0·38	1·32	1·31	1.45 P.M.: left corpus striatu punctured.
	March 4th	10¾ to 11¼ A.M.	100·3	2·91	0·21	1·25	0·59	—
Rabbit B	March 23rd	5 to 6 P.M.	100·2	2·91	0·30	0·96	0·13	—
	March 24th	10¾ to 11¼ P.M.	101·7	3·07	0·32	0·75	0·18	2 P.M.: right corpus stria punctured.
	March 26th	10¾ to 11½ A.M.	100·8	2·86	0·23	0·89	0·21	4.30 P.M.: left corpus striatum punctured.
	March 27th	1 to 2 A.M.	102·4	3·06	0·13	1·47	0·20	—

TABLE XXXV.

Dec. 22nd, 1895—Male Dormouse.				Dec. 22nd, 1895—Female Dormouse.			
Temperature of air.	Rectal temperature of mouse.	Time P.M.	Remarks.	Temperature of air.	Rectal temperature of mouse.	Time P.M.	Remarks.
Deg. C.	Deg. C.			Deg. C.	Deg. C.		
5·5	9·0	3.40	Quiet; coiled up.	5·5	9·0	3.40	Quiet; coiled up.
10·0	11·0	3.55	,, ,,	10 0	10 5	3.55	,, ,,
12·0	14·5	4.10	,, ,,	12·0	14·25	4.10	,, ,,
18·0	26·0	4.25	Awake.	18·0	18 5	4.25	Awake.
17·0	28·0	4.40	,,	17·0	23·0	4.40	,,
20·0	33 0	4.55	,,	20·0	30 0	4.55	,,
20·5	33 0	5.10	,,	20 5	32 5	5.10	,,
18·5	33·25	5.25	,,	18·5	32·25	5·25	,,
7·0	30 0	5.45	Very lively	7·0	36·0	5.45	Very lively.
7·0	31·0	6.0	,,	7·0	34·0	6.0	,,
7·0	31·0	6.30	,,	7·0	33·0	6.30	,,
6·5	23 0	7.0	,,	6·5	33·0	7.0	,,
6·5	30·5	7.30	,,	6 5	31·0	7·30	,,
6·0	34·0	8.30	,,	6·0	34·0	8·30	,,

usually an hour. Of course, the sulphuric acid tube and caustic potash tubes on the animal side gained more than those on the other side, for these only showed the H_2O and CO_2 in the air drawn through, while those on the animal side showed this, and in addition the H_2O and CO_2 exhaled by the animal in one hour and taken up in the air current passing through the chamber. By subtraction we found how much H_2O and CO_2 were produced by the animal. The following table (Table XXXIV.) shows the results of four experiments on two rabbits.

It will be seen that the excretion of CO_2 was not in Rabbit A strikingly increased by the pyrexia due to the cerebral lesion, for although after both operations it was a little higher than immediately before, yet after neither was it so high as on two days before any operation. In Rabbit B there does appear to be a slight increase after each operation, but I think you will agree with me that the variations in both animals are so slight and so well within the normal variations that we may conclude that damage to the corpus striatum does not increase the output of CO_2, and in this respect the pyrexia which follows it is similar to the pyrexia which accompanies those fevers in which the excretion of CO_2 has been investigated. Inspection of the figures also shows that the pyrexia caused no constant alteration in the amount of aqueous vapour exhaled. It will be noticed also that it is impossible to trace any relationship between the CO_2 and H_2O in the air and that exhaled by the animal. I need hardly add that the position of the lesion in the brain was always confirmed by a post-mortem examination.

Dr. Pembrey and I have performed a number of experiments upon hybernating dormice.[7] When these creatures are hybernating their temperature is very low, the rectal temperature usually being about 9° or 10° C.; if they are brought out of a cold into a warm atmosphere their temperature slowly mounts at about the same rate as that of an equal weight of water (for their specific heat is very little less than that of water) until it reaches about 16° C., when it suddenly mounts many degrees in a few minutes to between 33° and 36° C.; at the same time the sleepy animal becomes active and runs about. The following table shows this rise (Table XXXV.). And it also shows that mere lowness of external temperature will not cause the animal to sleep or its temperature to fall. This will only happen when lowness of external temperature causes the creature to become inactive. This fact is very well shown in Table XXXVI.

TABLE XXXVI.—*Dec. 29th, 1895: Female Dormouse.*

Temperature of air.	Rectal temperature of mouse.	Time P.M.	Remarks.
Deg. C.	Deg. C.		
21·25	33·5	12.15	Wide awake and running about.
9·5	34·5	12.30	,, ,,
9·5	29·0	1.0	,, ,,
9·25	30·5	1.45	,, ,,
9·25	18·0	2.30	Coiled up, begun to sleep, eyes still open.
9·25	14·5	3.0	Coiled up, fast asleep, eyes shut.
9·25	14·5	3.30	,, ,,
10·0	14·5	4.30	,, ,,
9·25	11·0	7.0	Coiled up, very fast asleep.

Our observations brought out the interesting fact that this characteristic sudden rise of the animal's temperature was always associated with an equally sudden increase in the output of carbonic acid. The animal was placed in a chamber through which air was drawn, and the temperature of the air in the chamber was varied by alterations in the temperature of a water bath. As the air left the chamber the CO_2 in it was determined, a separate determination being made for each variation in the temperature of the air in the chamber. The following table (Table XXXVII.) shows very well this great increase in the output of CO_2; and the next table shows that, like the temperature, the output of CO_2 depends, not upon the external temperature, but upon the activity of the animal (see Table XXXVIII.).

[7] Journal of Physiology, vol. xix., Nos. 5 and 6.

TABLE XXXVII.—*Dormouse No. 1, Sept. 21st, 1894.—The active dormouse was in the ventilated chamber—water-bath = 25° C.—for thirty-five minutes before the first period. Temperature of the air of the room = 15° C. Consecutive periods of fifteen minutes.*

Temperature of water-bath.	CO_2 discharged in decigrammes.	Remarks on the dormouse.
Deg. C.		
25·0	236	Active; washing itself.
23·75	173	Quiet.
25·5	188	Quiet, coiled up, apparently asleep.
15·0	183	Woke up for a moment, then quickly coiled itself up.
15·0	59	Quiet, coiled up.
24·25	23	,, ,,
25·0	20	,, ,,
24·5	159	Awakes towards the end of this period.
25·0	335	Awake, but fairly quiet.

TABLE XXXVIII.—*Dormouse No. 1,* Sept. 24th, 1894.—The sleepy dormouse was in the ventilated chamber—water-bath = 25° C.—for thirty minutes before the first period. Temperature of the air of room = 15° C.; consecutive periods of fifteen minutes.*

Temperature of water-bath.	CO_2 discharged in decigrammes.	Remarks on the dormouse.
Deg. C.		
25·0	113	Coiled up.
24·75	112	,,
15·0	220	Active at first; then coiled up.
15·0	68	Coiled up.
15·0	21	,,
25·0	17	,,
25·0	14	,,
25·0	20	,,
24·5	25	,,
24·75	20	,,

* The dormouse was coiled up and fast asleep at the end of the experiment.

We learn, therefore, that the rise of temperature which occurs when hybernating dormice become active is unlike the rise of temperature which occurs when a rabbit is afflicted with swine erysipelas or has its temperature raised by damage to the corpus striatum, for it is accompanied by an enormous increase in the output of carbonic acid. This goes to show what is probably true—namely, that the metabolic processes of the pyrexia due to cerebral lesions and of that due to fever are quite different from those of health, and not merely an exaggeration of these.

I think now we have come to the end of our discussion of the problem of the variations in the production and loss of heat in pyrexia, and the three great main conclusions to which we seem to have come are:—1. In man at least pyrexia is not produced by the same method in all fevers; sometimes the rise of temperature is due to an increased production of heat, and sometimes to a diminution of the loss. 2. In the present state of our knowledge animal calorimetry is very difficult, and the results obtained from calorimeters must be received very guardedly, especially when they are applied to man. 3. In some forms of pyrexia in which the production of heat is increased the metabolism leading to this takes place in the proteid tissues of the body, and probably the metabolic processes concerned in a pathological rise of temperature are different from those of health.

A very difficult problem which has been much occupying the minds of the profession lately has been that of why almost all micro-organisms which are harmful to the body raise its temperature, and the suggestion has been made that the rise of temperature is a defensive mechanism, or, in other words, pyrexia is, like phagocytosis or chemiotaxis, in some way harmful to the fever-producing micro-organisms or

their toxins. Of course, it does not follow from this view that the higher the temperature of the body the better the prognosis, for the higher temperature might be taken to indicate that the dose of infection was very severe, and that therefore the body did all it could to resist the invasion, nor, on the other hand, would it follow that if the temperature did not rise much the dose of infection was slight, for it might be that the body was feeble and had but little power of raising its temperature and therefore defending itself. We see, therefore, that clinical observation can hardly settle the point, but in passing I may mention that I have seen a severe case of typhoid fever in which during the second week of the illness the temperature was very irregular; the patient, however, always felt better and had a better pulse when her temperature was high than when it was low.

A few years ago much was hoped from the antipyretic drugs—antipyrin, acetanilide, and phenacetin; and if it could have been shown that they distinctly improved the condition of the fevered patient it would have been a strong argument against the view that pyrexia is a defensive mechanism. The reverse, however, is the case, for they are not now often employed as antipyretics, and in a discussion on pyrexia and its treatment which took place at the Bristol meeting of the British Medical Association held in 1894, speaker after speaker got up and said that, as a general rule, it did more harm than good to treat the pyrexia of fever.

Some few fevers are treated by agents which lower the temperature, but these very fevers are instances of the exception proving the rule. Ague is treated by quinine, the temperature falls and the patient is better. This, however, is not because the quinine is an antipyretic, but because it is a poison to the plasmodium malariæ; the patient's temperature falls because the pyrexial agent is destroyed. The same is true of syphilis. If a patient is suffering from syphilitic fever his temperature falls when he takes mercury, not because mercury is an antipyretic, but because the cause of the pyrexia is destroyed. Again, it is almost certain that any benefit that follows in rheumatic fever from the administration of salicylates is not due to their antipyretic action, but because they are specifics for rheumatic fever, for other antipyretics are not equally efficacious, and salicylates benefit other symptoms than the temperature—viz., the pain. It is generally believed, and in all probability correctly, that many cases of typhoid fever are benefited by cold sponging or by a cool bath. Many have hastily concluded that the bath does good because it lowers the temperature. But this is probably incorrect. In the first place we must remember that the cold sponging or bath does more than lower the temperature; it diminishes the delirium, the tremor, and the prostration. In any of these ways it would do good. But, further, Roque and Weil claim to have shown that "in typhoid fever left to itself the toxic products manufactured by the bacillus and organism are eliminated in part during the illness. The urotoxic coefficient is double the normal, but this elimination is incomplete and is only completed during convalescence, for the hypertoxicity continues for four or five weeks after the cessation of the fever. In typhoid fever treated by cold baths the elimination of toxic products is enormous during the illness. The urotoxic coefficient is five or six times the normal. The hypertoxicity diminishes as the general symptoms mend and as the temperature falls, so that when the period of pyrexia and convalescence sets in the elimination of toxins has ceased." So we learn that it is by no means certain that in typhoid fever the benefit of cold baths is due to their antipyretic influence, and we see that clinical medicine affords no evidence that antipyretics are useful in fever.

I had hoped to be able to lay before you some original observations bearing on the question of whether or not pyrexia is a protective mechanism, but, unfortunately, I have not had time to carry them out, and therefore I must content myself with giving you briefly those of others. The best collection of the literature of this subject is given by Max Muller,[8] and many of the following references are quoted from him. Heydenreich[9] found that the spirillum of relapsing fever lost its mobility quicker at 40° C. than at 37° C., while at from 15° to 22° C. it retained it a long time. Then in 1880 Pasteur[10] made the observation that fowls which were ordinarily refractive against anthrax bacilli succumbed to them if their temperature had been artificially lowered by their being cooled, and in the same publication next year he said he had found that the virulence of anthrax bacilli is diminished by a temperature of from 42° to 45° C. Wagner[11] infected fowls with anthrax bacilli and spores, and kept down the temperature of some of them by partially immersing their bodies in water; these succumbed, but others left at the ordinary temperature did not. He also infected a series of eleven in whom the temperature was kept down by antipyrin; of these eleven six were taken ill; and of these six five died. This, he thought, was due to a lowering of the temperature by antipyrin. Rovighi, in a paper abstracted in volume vii. of the same *Centralblatt*, gives an account of how he infected three series of rabbits with saliva; one lot were placed in an incubator the temperature of which varied from 37° to 42°, another lot were left at the ordinary temperature, and the third lot were artificially cooled. He found the mortality to be highest among those artificially cooled and least among those artificially warmed; and in the same periodical for the year 1891 it will be found to be stated that Walther observed that after infecting rabbits with the pneumococcus those placed in a warm oven lived longer than those placed at the ordinary temperature of the room. Koch found that if tubercle bacilli were kept at a temperature of 42° C. for three weeks their development was much hindered, while the best temperature for their development was from 37° to 38° C. We thus see that this bacillus, the scourge of the human race, flourishes best at the internal temperature of man, and it is quite possible that if a phthisical patient's temperature could be safely kept at 108° F. for a month he might be cured. Fränkel[12] finds that the pneumococcus named after him loses its influence on rabbits in twenty-four hours if they are kept at a temperature of 42° C. Both Bumm and Finger have observed that the temperature at which the gonococcus flourishes best is between 33° and 37° C., and that higher temperatures stop its development. Max Muller came to the conclusion that the higher the temperature the less rapidly typhus bacilli multiplied. Welender and Berlien[13] have been treating soft sores by means of a thermostat, an instrument which keeps the sore at a temperature of 41° C., and they claim excellent results for this treatment. Filehne, at a meeting of the Physiological Society held at Oxford on August 11th, 1894, gave an account of some experiments in which he infected rabbits with erysipelas and studied the changes at the seat of infection, the ear. In animals kept in a warm chamber the reaction in the ear was slight, and attained its height in two days and the animal was soon well. In animals kept at the ordinary temperature the reaction was much more severe, and lasted ten or eleven days. In animals kept in a cool chamber nothing happened so long as they remained there, but as soon as they were taken out and left at the temperature of the room they had a very severe attack of erysipelas.

Loewy and Richter[14] caused a rise of temperature in rabbits by puncture of their corpora striata; they then infected them with the bacilli of diphtheria, fowl cholera, swine erysipelas, and pneumonia. They came to the following conclusions: (1) that with very large fatal doses the animals whose corpus striatum was punctured lived longer than the control animals; (2) if the animals whose corpus striatum was punctured had a dose two or three times as large as that necessary to kill an ordinary animal they recovered; and (3) when a local injection of swine erysipelas was made into a rabbit's ear the local reaction was most marked in those animals in whom the corpus striatum had been punctured, but they invariably got quite well.

I quite admit that all these observations do not prove that pyrexia is a protective mechanism, but they certainly suggest that it is, and many who have thought about the subject have given their adhesion to this view; such, for instance, are Roy,[15] Cantani,[16] and Sanarelli.[17]

It struck me some time ago that if pyrexia is a protective mechanism it might be a good thing to administer to fevered patients drugs that would raise their temperature, if before doing this it could be shown by laboratory experiments that such drugs have the power of diminishing the severity of fevers. There are many pyretic drugs. The

[8] Wirkung der Fiebertemperatur auf den Typhusbacillus, Zeitschrift für Hygiene und Infectionskrankheiten, 1895, S. 244.
[9] Centralblatt für die Medicinischen Wissenschaften, 1876, No. 28.
[10] Charbon et Septicémie, Comptes Rendus, 1880.
[11] Centralblatt für Bakteriologie und Parasitenkunde, 1881, Band ix.
[12] Grundriss der Bacterienkunde, 1887.
[13] Norddeutsches Medicinisches Archiv, 1895, No. 12.
[14] Ueber den Einfluss von Fieber und Leucocytose auf den Verlauf von Infectionskrankheiten, Berliner Klinische Wochenschrift, 1895, No. 15.
[15] Brit. Med. Jour., vol. ii., 1893.
[16] Transactions of the International Medical Congress at Berlin, 1890.
[17] Annales d'Institut Pasteur, April, 1894.

temperature may rise to 104° F. as a result of belladonna poisoning. In animals, at least, large doses of cocaine will cause a rise of temperature. It is said the best dose for producing this effect is a subcutaneous injection about eight milligrammes per kilogramme of the animal, the dose to be frequently repeated. Strychnine and caffeine, too, will both raise the temperature a little. But by far the most important drug for raising the bodily temperature in β-tetrahydronaphthylamine. Some remarkable experiments concerning this drug are given by Stern.[18] For instance, he took a rabbit weighing 1600 grammes, the temperature of which was 40° C., and at 10 42 A.M. injected subcutaneously 0·075 grammes of β-tetrahydronaphthylamine. The temperature was taken every few minutes afterwards with the following results:—At 10.55 A.M. the temperature was 40° C.; at 11.0 A.M. it was 40·2°; at 11.8 A.M. it was 40·9°; at 11 20 A.M. it was 41·4°; at 11 40 A.M. it was 43 0°; at 11 52 A.M. it was 44·5°; and at 12.2 P.M. the rabbit died. So that the drug actually raised the temperature 4·5° C. in an hour. By giving a smaller dose of the drug he was able to obtain a considerable rise of temperature without killing the animal.

Such a remarkable drug appeared to me to be worthy of further investigation, and Dr. J. Fawcett agreeing with me we made some experiments. We employed a 3 per cent. aqueous solution and always gave it subcutaneously. We performed several experiments; the following are the details of one.

The rabbit weighed 2400 grammes. At 1.30 P.M. the rectal temperature before injection was 38·7° C.; at 1.35 P.M. 3 c.c. of solution were injected; at 1.55 P.M. the temperature had risen to 39 3°; at 2.10 P.M. it was 40·5°; at 3.5 P.M. it was 41 5°; at 4 P.M. it reached 41·9°; and from 4.30 to 7 P.M. it gradually fell to 39·3°, and the following table (Table XXXIX.) shows the results of all our experiments.

TABLE XXXIX.—*Showing the result of injecting a 3 per cent. solution of β-tetrahydronaphthylamine subcutaneously in five rabbits.*

Number of experiment.	Weight of rabbit in grammes.	Dose injected.	Time taken to attain maximum temperature.	Temperature at beginning in degrees F.	Temperature at end in degrees F.	Rise in degrees F.	Rise in degrees C.	Remarks.
1.	2400	3 c.c.	3 hrs.	101·6	107 4	5·8	3·2	—
2.	2050	3 c.c.	1¼ hrs.	102·7	112 6	9·9	5·5	This animal died; greatest rise.
3.	2570	4 c.c.	2 hrs.	103 1	106 8	3·7	2 1	—
4.	2200	3 c.c.	2½ hrs.	101 4	104·3	2·9	1·6	Least rise.
5.	2200	3·5 c.c.	4 hrs.	101·8	105·0	3·2	2·2	—

It will be seen that in one animal a rise of 5 5° C. took place. This died, but all the others recovered, and in one of them there was a rise of as much as 3 2° C. In all five experiments the pulse and respiration were enormously increased in rapidity, often both were so quick that they were quite uncountable. We never observed any of the variations in the size of the pupil or the vessels of the eye that Stern mentions. As animals which, like rabbits, do not perspire much must lose most of the heat they part with by the lungs, the rise of temperature produced by β-tetrahydronaphthylamine cannot have been due to a diminution of the loss of heat. Indeed, judging by the rapidity of respiration, this must have been much more rapid than usual, and probably the creature was by increasing its heat loss struggling against the rise of temperature produced by the drug. The animals for an hour or two after the drug was injected were usually rather restless, frequently shifting their position and turning round, but they never ran about or made any prolonged severe muscular movement. This restlessness was always followed by marked loss of muscular power, but nevertheless the temperature continued to rise. The only animal that had convulsions was the one that died, and they did not appear until shortly before death. These facts seem to me to be strongly in favour of the view that the drug has in some way greatly increased the production of heat, and that this increased production is not due to muscular movement, for the rise is altogether too great and too rapid for it to be caused even in large part by the increased muscular movement due to the greater rapidity of the respiration and pulse. In support of this view I may mention that Stern was also of opinion that the muscular movements were not sufficient to explain the rise of temperature, for in his experiments this sometimes occurred in animals which were quiet without any drug being given to keep them quiet, and also in those which were kept quiet by morphia. Further, the rise of temperature that is seen in animals convulsed with strychnine is never nearly so great as that produced by β-tetrahydronaphthylamine, although rabbits under the influence of this drug never show muscular contractions comparable to those produced by strychnine. Then, too, some experiments performed by Mosso go to show that even the comparatively slight rise of temperature in strychnine poisoning is not due solely to muscular contractions. I cannot help thinking, therefore, that we have in β-tetrahydronaphthylamine a drug which stimulates the thermogenetic without exciting the motor function of muscle, and that therefore we see—as we have already seen in the patients afflicted with hemiplegia—that the two functions are distinct.

I have already pointed out in these lectures that damage to the corpus striatum produces a considerable rise of temperature. The rise produced by β-tetrahydronaphthylamine so resembles in extent and rapidity that caused by these injuries that it is at least likely that the drug acts on the muscles through the central nervous system. Dr. Fawcett and I tried to find out whether this was so, but all the experiments we could devise necessitated fixing the animal down and performing artificial respiration, and, as I have already pointed out, this interferes so much with the animal's temperature that we were unable to obtain any satisfactory answer to the question we attempted to solve.

I have not yet had time to see whether the administration of this drug increases the resistance to any febrile diseases, but it is clear that even if it does it will have to be given very cautiously to man on account of its marked effect on the heart.

The only duty that now remains to me is to thank you for having listened to these lectures, and to express my regret that they should have been so imperfect and fragmentary. This is, for the most part, my fault, but it is also due to the difficulties of the subject. I have not referred to the work of many to whom reference should be made were I writing a full account of pyrexia; this is because I believed the founder's wish to be that lecturers should relate what they themselves had done and thought rather than that they should give a condensed account of what others had done and thought.

[18] Virchow's Archiv, 1889, S. 14.

A SECOND SERIES OF FOURTEEN CASES OF EXCISION OF THE RECTUM.

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A PAPER on the first series of fourteen cases was read at a meeting of the Liverpool Medical Institution two years ago.[1] They were all malignant; thirteen were carcinoma and one was sarcoma. The present series is comprised of two cases of syphilitic stricture, two of villous tumour, and ten of carcinoma.

The minute structure.—I make it a rule to examine with the microscope all tumours removed, and it is strange how frequently one finds deviations from the normal type of growth, or something altogether unexpected. The first example of this in this series was Case 17. The patient was a spare, anæmic woman, aged fifty-six years, who had five years' history of constant desire to defæcate, with passage of mucus and blood. On examining her a very large mass of what was supposed to be soft fungating carcinoma was felt two and a half inches from the anus. It surrounded the

[1] Vide THE LANCET, Feb. 23rd, 1895.

bowel and extended up out of reach. Six inches of rectum were removed by the "sacral route." She made a slow but good recovery, and is still well. I only discovered something unusual about this tumour when, on putting a piece into the fixing solution, villous fringes floated out in the fluid. Further investigation showed that the whole of this mass of growth, which involved more than three inches of the whole circumference of the bowel, and was upwards of an inch thick, consisted of branching villi covered with a single layer of long columnar cells having small nuclei placed near their bases. Villous tumours of the rectum are supposed to be rare, and I have never seen a report of one so extensive as this. The patient was operated on in July, 1895, and she was still quite sound in April, 1897. The other case of villous tumour was much smaller and was recognised as a probably innocent growth before operation. It occurred in Case 25, in a woman also aged fifty-six years, and occupied an oval patch on the anterior wall of the rectum about 2 in. by 1 in., and was situated two inches above the anus. It was excised with the whole thickness of the bowel through a posterior median incision. The parts were sutured, and a normal rectum resulted. She has left her old address, and I cannot find her; but in such a case recurrence is practically out of the question. The microscopical structure is like the last—essentially innocent.

The next two cases worthy of attention on account of their pathological interest are those of a man aged twenty-seven years, and a woman aged forty-six years (Cases 23 and 26). Both were admitted with malignant stricture, and both had a history of the previous removal of a polypus—the man in New York seven months previously, and the woman in London in St. Bartholomew's Hospital by Mr. Willett three years previously. The polypus in the man's case may have been malignant, for the tumour had the usual characteristics of colloid cancer; but that in the case of the woman was probably, nay, almost certainly, innocent, for the entire piece that I took was pure villous tumour, in which the other coats of the bowel, including the sub-mucous coat, were absolutely normal. Another part, however, examined by Mr. Robert Bickersteth, was cancerous. Of course, we knew the tumour was in part malignant, for there were cancerous glands in the meso-rectum. No doubt the part I examined was some of the original disease—a simple villous tumour. But the original growth in time became malignant, and thus furnishes another example to those who doubt that innocent tumours may become malignant. Another point of interest in the man's case was that he had a malignant gland (of the same character) in the left groin. This is the only time that I have seen cancer in a gland in the groin secondary to a growth placed well within the rectum. During my absence last year another case of villous tumour becoming malignant was admitted. It consisted of three polypoid masses, one of which has the appearance of villous tumour, but the others of cylindrical-celled carcinoma. It was very successfully excised through a posterior median incision by Mr. Robert Bickersteth. The man left with a normal rectum and has remained well since. Thus no less than four (possibly five) cases of villous tumour of the rectum have been met with in one year, though only two retained their innocent features at the time of examination. I can quite understand that those who have not the opportunity of seeing these specimens may feel a little sceptical at such an extraordinary percentage, but in about fifty cases of tumour of the rectum which I have examined microscopically these are the only examples of villous tumour met with.

In the first series of cases I called attention to one of squamous-celled epithelioma, which started in the mucous membrane of the bowel (Case 8). In this series there is another (Case 21). It occurred in a woman aged forty-seven years, and caused a tight stricture one-and-a-half inches above the anus. It infiltrated the vagina, but evidently did not originate there, as the vaginal mucous membrane was intact. Such abnormal forms of carcinoma probably grow in "rests" or in tracts of tissue such as give rise to rectal dermoids. Finally, in this connexion, the evidence is again in favour of colloid being decidedly more malignant than cylindrical-celled carcinoma. I mention this, as the contrary opinion seems to prevail.

The operation.—The methods used may be arranged as follows: (1) perineal incision, which suffices for the removal of about three inches of bowel—more in the female; (2) the same, combined with excision of the posterior wall of the vagina, which gives a great deal of room—the vagino-perineal operation; (3) posterior median proctotomy for the removal of small growths with subsequent suture; and (4) the sacral operation of Kraske. In none of these cases has the upper part of the rectum been removed by abdominal section.

Partial excision of the rectum through the perineum is a very successful operation. It is generally in these cases, in which the growth is small and situated near the anus, that we may hope for a long immunity. Growths higher up are longer in attracting the patient's attention, and the glands of the meso-rectum are often involved before they are recognised and sent for operation. If the patient is able to bear the complete operation, it is always better to excise the entire circumference of the bowel in all cases in which the removal is too extensive to permit restoration of its calibre by suture. In those cases in which I have removed a growth from the posterior wall and left part of the anterior wall and anus, the discomfort from mucous discharge and prolapse has been considerable, and I have found it desirable to subsequently cut away all exposed mucous membrane. In fact, the subsequent discomfort from these slight operations has generally far exceeded that of the removal of six or seven inches of bowel.

The vagino-perineal operation is a good one, but it is, of course, essential to restore the vagina and perineum. I once saw a patient upon whom this operation had been performed without restoration, and the result was deplorable, for the whole of the pelvic organs prolapsed from want of support. When the diseased parts have been excised the stump of the rectum is brought out at the posterior end of the wound attached to a glass tube; the remains of the elastic wall of the vagina are sutured in front, and deep silver sutures are passed between the two and a very long perineum procured. Generally the anatomical result is excellent, and as a corroborative detail it may be mentioned that two of my younger patients married after this operation, but, perhaps fortunately, did not become pregnant.

The posterior median proctotomy for the removal of small growths with subsequent restoration of the bowel is perhaps the most interesting operation. A long backward incision is made, carried up over the sacrum if the tumour is in the middle third, and the bone is cut across and turned as a flap to the left side. The rectum is then opened in the middle line, and the disease examined with the finger. If it is a short stricture the entire circumference is excised; if an oval patch then only the affected part. In either case restoration is best effected by sutures and not by Murphy's button. Having sewn up the wound made in the bowel for the removal of the growth the posterior lineal incision is closed, the sacral flap restored, and the anus forcibly dilated to paralyse the sphincter. In some cases the result of this operation is nearly perfect.

The sacral operation of Kraske is, of course, the most serious. The incision is made as in the last case, the coccyx, or coccyx and lower part of the sacrum, being cut across and turned to the left. It is important to retain these bones, as when their support is lost the bowel may prolapse badly unless the special truss recommended in my former paper is worn. Having exposed the bowel, if the growth is high up it may be cut across below, and the anus left intact; if not, dissect it entirely up from below. There is no value in the lower piece of bowel, only its removal makes a larger wound. Next, with constant use of compression forceps and aneurysm needle before the knife or scissors, clear the bowel until the meso-rectum is cut away and the peritoneum freely opened; then draw down as much as is necessary to insert a glass tube above the growth, ligature it in, and cut off the latter. Enough bowel must be drawn down to allow the end to be brought out of the wound without tension. The sacral flap is then restored, the bowel connected to the skin with sutures, and the rest of the large wound in front packed with cyanide gauze.

I have tried various ingenious methods, including Murphy's button, to approximate the upper and lower ends after extensive removal, and I am now persuaded that any such attempt is bad practice when the excision exceeds two, or at most three, inches of bowel. The healing is longer and more dangerous and the result little, if any, better. It would occupy too much space to go into the reasons, but I have tried approximation after extensive removal several times, and I regard it as a failure. It is certainly more dangerous than the glass tube method I formerly recommended, and to which I have decided to return. On the other hand, the use of a sacral flap in place of cutting away

the bones is a distinct improvement, and I believe at the present time only one patient is wearing a truss, and that is for the partial perineal operation. All the Kraske cases describe themselves as having little or no loss of control over their bowels. In fact, they are more inclined to stricture than a patulous anus with prolapse.

Results.—The anatomical results have been referred to in describing the operations. The best result is obtained when a small growth or short segment has been removed and the parts have been satisfactorily united by suture. The next best is after the complete removal of the lower end of the bowel, whether by the perineal, vagino-perineal, or sacral operations; it does not matter how much is removed so that a clean end is brought out and the natural support of bones or perineum is made good. The worst anatomical results follow when a lot of exposed mucous membrane is left with a long slit-like anus, or when the support of the perineum or sacrum and coccyx is wanting.

Clinically there are many circumstances which influence the success of the operation, apart from the physical powers of the patient and the skill of the surgeon. The chief of these are: 1. Early recognition of the disease.—This means that either it is low down or has rapidly formed a ring stricture. In the majority of cases the early symptoms are slight, and when the patient seeks advice the tumour is already large. 2. The nature of the growth.—In innocent tumours the result should of course be cure, though in operating through the anus this does not appear to be the case with villous tumour. A villous tumour is generally a sufficiently serious affection to call for posterior median proctotomy. Of malignant tumours the usual cylindrical-celled carcinoma of the part offers the best prospect; squamous-celled epithelioma perhaps the next best; colloid and sarcoma the worst. 3. Involvement of glands.—Wherever I find malignant glands in the meso-rectum I always regard the case as certain to have a recurrence. Occasionally the glands may be recognised before operation, but usually they are concealed by the tumour. 4. Age.—

TABLE OF TWENTY-EIGHT CASES OF EXCISION OF THE RECTUM

Case.	Date.	Sex.	Age.	Site of tumour.	Operation.	Amount removed	Result.	Died later.	Still living.	Remarks.*
1	1881	M.	47	Lower third of rectum, small.	Through perineum.	2½ in.	Recovered.	—	10 or more years.	Shown at Liverpool Medical Institution, 1885. Left in good health for America, 1891.
2	1888	F.	56	Lower third, small.	Through perineum.	2½ in.	Recovered.	2½ years.	—	Had stricture of rectum.
3	1890	F.	37	Middle third; sarcoma.	Kraske (tube).	7 in.	Recovered.	One year.	—	Died of recurrence in internal organs and skin at distant parts.
4	1890	M.	46	Middle and lower thirds.	Kraske (tube).	6½ in.	Recovered.	Ten months	—	Previous colotomy. A small piece of growth left in ureter.
5	1891	M.	41	Middle and lower thirds.	Kraske (tube).	7 in.	Recovered.	4 years.	—	No recurrence for three years. At work all the time.
6	1891	F.	55	Middle and lower thirds.	Kraske (tube).	5 in.	Died.	—	—	Died on the eleventh day. Exhaustion.
7	1892	M.	56	Middle third.	Kraske (tube).	8 in.	Recovered.	2½ years.	—	At work for two years as agent.
8	1892	F.	29	Lower third.	Vagino-perineal incision.	4 in.	Recovered.	2½ years.	—	Removed part of vagina. Very well for some time. Got married.
9	1893	M.	59	Lower third, small.	Through perineum.	3 in.	Recovered.	—	4 years.	Working all the time. Very well.
10	1893	M.	64	Middle third, small.	Kraske (approximation).	2 in.	Recovered	Lost sight of	after 2 years.	Perfectly normal rectum.
11	1893	F.	42	Lower third.	Vagino-perineal incision.	4 in.	Recovered.	10 months.	—	Rapid recurrence owing to infected lymphatics. Part of vagina removed.
12	1893	M.	56	Lower third.	Kraske (approximation).	4 in.	Recovered.	—	3½ years.	Normal rectum.
13	1893	M.	64	Middle and lower thirds.	Kraske (approximation).	4½ in.	Recovered.	2½ years.	—	Anus incomplete behind.
14	1894	M.	60	Middle third.	Kraske (tube).	4 in.	Died.	—	—	Patient greatly reduced by previous complete obstruction and colotomy.
15	1895	M.	60	Lower third.	Through perineum.	4 in.	Recovered.	1 year.	—	Adherent to bladder.
16	1895	M.	64	Lower and middle thirds.	Kraske (approximation)	7½ in.	Recovered.	6 months.	—	Had malignant glands.
17	1895	F.	56	Middle third (villous).	Kraske (tube)	6 in.	Recovered.	—	20 months.	Good anus.
18	1895	F.	23	Lower and middle thirds.	Kraske (tube).	4½ in.	Recovered.	?	—	Very well for some time. Married. Recurrence after one and a half years. Not seen lately.
19	1895	F.	34	Entire rectum (syphilitic).	Kraske (tube).	5 in.	Recovered.	—	17 months.	Much better.
20	1896	F.	64	Lower third.	Through perineum.	3 × 2 in.	Recovered.	—	13 months.	No recurrence.
21	1896	F.	47	Lower third.	Vagino-perineal.	3 in.	Recovered.	—	12 months.	No recurrence; good anus.
22	1896	F.	25	Lower third (syphilitic).	Through dilated rectum.	½ in.	Recovered	—	11 months.	Diaphragm stricture; perfect restoration.
23	1896	M.	27	Middle and lower thirds.	Kraske (tube).	4 in.	Recovered.	—	10 months.	Glands infected.
24	1896	F.	57	Middle and lower thirds.	Vagino-perineal.	4½ in.	Recovered.	—	10 months.	Colloid growth; glands.
25	1896	F.	56	Middle third (villous).	Post. median proctotomy.	2×1½ in.	Recovered.	—	8 months.	Normal rectum.
26	1896	F.	46	Middle and lower thirds.	Kraske (approximation)	4 in.	Recovered.	—	6 months.	Cancer following villous tumour.
27	1896	M.	63	Middle third, extensive.	Kraske (approximation).	3½ in.	Died.	—	—	Localised peritonitis; shock.
28	1896	F.	34	Lower third.	Vagino-perineal.	3½ in.	Died.	—	—	Cancer very foul. Exhausted patient. Shock and septic wound.

* The tumours were malignant where not otherwise mentioned.

The younger the patient the less the chance of permanent cure. I have now seen quite a dozen cases under twenty-five years. The rectum is, I think, the earliest of all sites for true carcinoma, though a majority of the patients are between fifty and seventy years of age.

In regard to the survival of my cases after the operation I can speak with some degree of certainty, as I have taken considerable pains to keep them under observation. Of the first series of fourteen all were cases of malignant disease. One was certainly cured; several survived for from one to four years, and I predicted that one if not two more would prove to be cured. I am glad to report that so far this prediction seems likely to be fulfilled. One is a patient of Dr. Peirce, of Hoylake, and I hear that he is sound and well, working every day on his farm at the age of sixty-three years. The other is a patient of Dr. Gwynn, of Wnitchurch, and he writes me that this man is "so well that he has not seen him for months," and having now re examined him reports that "there is no appearance of a return of the disease, and the control over the parts is good." In the former the operation was done rather more, and in the latter rather less, than four years ago. Of the first fourteen cases of malignant disease, the last of which was operated on more than three years ago, I can now make the following definite report. Two died from the operation; three are cured; one was under observation for ten years and the other two for four years. One more I am almost certain is cured, but I lost sight of him after two years, when he was perfectly well. He lives in the heart of Wales, and all my letters come back without having reached him. The remaining eight averaged just two years of life after the operation, all of them dying from recurrence. In my judgment there are very few parts of the body where better results can be obtained when dealing with cancers of considerable dimensions.

In regard to the second series of fourteen cases four are non-malignant. They are all well and likely to remain so. Of the ten cancer cases two died from the operation, and two more have died since from recurrence, one at the end of twelve months and the other at the end of six months. This has been rather an unlucky series of cases, many of them having had enlarged glands in the meso-rectum at the time of the operation. I dare only predict that one may prove a cure—Case 20, a woman aged sixty-four years, who had a cylindrical-celled carcinoma 2½ in. by 1½ in. on the posterior wall of the rectum about two inches from the anus. In Case 21 I examined the patient in May, and she is quite free from recurrence twelve months after operation; but her tumour proved to be squamous-celled carcinoma, and I have less hope of cure in this form of growth. However, things may turn out better than I expect. Six of the ten operated on during the last two years are well and, so far as I can tell, without fresh growth. The case in which Mr. Robert Bickersteth operated for me, which is not included in the table, has probably a better prospect of permanent cure than any of the others.

Fatal cases.—The mortality is exactly the same for both series—namely, 14 per cent. In the first series the two deaths occurred in elderly patients and were the result of shock, one dying gradually on the eleventh day from exhaustion and the other rapidly soon after the operation. In the present series I had no death until the last two cases—the first in an old man, aged sixty-three years, who died on the sixteenth day from chronic septic poisoning, and in whom localised peritonitis was found. I blame the result here upon approximating the bowel after an extensive removal. The union was imperfect and the wound became septic before the peritoneum had healed. Had I brought the stump out and connected it with the glass tube the operation would have been shortened by perhaps half an hour and the wound would not have been contaminated with fæces until the peritoneum had closed. The second death occurred in a young woman with a remarkably foul cancer. It was so virulent that every little crack in the skin of my hands became poisoned, and I had five sores which refused to heal till I left home. No wonder that her wound was septic and that she, being in a very anæmic and exhausted condition at the time of the operation, gradually died on the twenty-fifth day. The peritoneum was not opened in her case.

Although the cancer cases are, on the whole, less favourable in this series than the last, I continue to thoroughly appreciate the value of the operation of excision of the rectum. In the less severe cases one has an excellent chance of obtaining a cure, and in many of the bad ones there is a considerable period of immunity during which life is by no means a burden to the majority.

The syphilitic cases.—Having included two cases in which I operated for syphilitic stricture, it is right that I should say a word respecting them. Case 22 offered such a tempting opportunity for a "radical" cure that I at once suggested that we should excise the stricture without attempting dilatation with bougies. She had a diaphragmatic stricture about an inch above the anus, and after dilating the latter I was able to draw it outside and excise it without the least difficulty. The wound was carefully sutured, it healed by first intention, and when examining her a month or two subsequently I could not detect the site of the operation. Case 19 was a very different business. Here we had an anæmic patient who had suffered for years from incurable syphilitic stricture. I had done what I could with bistoury and bougies, and it was her own desire that stronger measures should be taken. Under these circumstances, as life was really a burden to her I made the Kraske's incision and attempted to excise the whole rectum. But it was a more difficult and dangerous operation than I anticipated, owing to the dense adhesions contracted by the bowel with all neighbouring structures, and I found when I had got five inches freed that her condition was such as to make it imperative to conclude the operation at once. A glass tube was consequently ligatured in, the wound was packed with gauze, and the patient was sent back to the ward. Convalescence was slow, but in the end she recovered. There are still some two or three inches of strictured bowel, but it is not so narrow as that which was removed and yields to bougie treatment, which she is now carrying out herself. I have no reason to suppose that this patient is dissatisfied with the result of her operation, and she is certainly much better pleased in having the artificial anus near the old spot than she would be if it were in the groin, but knowing now myself the difficulties and dangers to be encountered in bad cases of syphilitic stricture I should in future have no hesitation in recommending colotomy when it was impossible to obtain relief by simpler measures. This, of course, does not apply to special cases like Case 22. Here no danger whatever is run, and there is no reason to object to excision if the surgeon thinks it to be the best method of relieving his patient.

Liverpool.

THE LOCALISING VALUE OF OPTIC NEURITIS IN INTRACRANIAL TUMOUR.

BY J. M. MARTIN, B.A., M.B., B.C. CANTAB.

DURING the last thirty years general opinion has wavered greatly as regards the certainty and frequency with which optic neuritis is produced by a growth within the cranium, and the greatest authorities from time to time have made diametrically opposite statements with regard to this condition. At various times it has been stated that optic neuritis has no localising value as regards the seat of disease, and at other times the directly contrary opinion has been put forward. Thus Dr. Hughlings Jackson in 1880 stated that "optic neuritis is of no value in localising disease in any part of the cerebrum or cerebellum," and Mr. Horsley now holds that optic neuritis is of distinct value in locating the position of the disease, more particularly as regards the side on which the disease is situated. But it is when we come to the question of unilateral optic neuritis that we find the greatest difference of opinion. For some observers state that in a case in which optic neuritis appears only in one eye, or appears in one eye before the other, or is more marked in one eye than in the other, the seat of lesion is on the opposite side of the brain; whereas others equally positively state that the lesion is on the same side as the eye in which the optic neuritis first appears or is more marked. It is as an attempt to try to arrive at the true facts of the case by examining rather a larger number of reports than has been presented before that I now bring forward the results of my analysis of 600 cases, which I have collected from various sources. Before I begin the discussion of the special subject

of this paper it will be of some value—if only to confirm the researches of former investigators—to give a general analysis of my series of cases and then consider the question of the localising value of optic neuritis. The result will not be so complete as I had hoped it would be, as in very few cases comparatively has it been noted in which eye the optic neuritis appeared first or was more marked.

It has always been stated that the male sex is more liable to intracranial growths than is the female sex. The numbers in my series are as follows:—

TABLE I.

Position of tumour.	Male.	Female.	Sex not stated.	Total.
Frontal	31	17	13	61
Temporo-sphenoidal	13	10	5	28
Motor area	77	22	22	121
Parieto-occipital	19	10	8	37
Multiple	18	9	1	28
Basal ganglia	20	12	4	36
Corpus callosum	7	5	1	13
Centrum ovale	19	10	1	30
Corpora quadrigemina	12	3	0	15
Pituitary	13	9	4	26
Crura	3	1	1	5
Pons and medulla	29	11	4	44
Cerebellum	82	34	22	138
General	10	7	2	19
Total	353	160	88	601

So that of 513 cases of intra-cranial tumour 68·8 per cent were males and 31·2 per cent. were females; that is, the male sex is more than twice as liable as the female sex to intra-cranial growth.

Having here given my first table it will perhaps be well at this point to define the regions I have adopted. Frontal—those tumours situated in front of the ascending frontal convolution externally, and as far back as the genu of the corpus callosum internally. Temporo-sphenoidal—those situated in the part of the cerebrum below the fissure of Sylvius and limited posteriorly by a line drawn from the posterior end of the fissure of Sylvius above to the lower end of the ex-occipital fissure below on the outer surface, and by the calcarine fissure on the mesial surface. Motor area—those situated in the precentral, post-central, and paracentral convolutions and their immediate neighbourhood. Parieto-occipital—those situated in or near the remaining cortex of the brain. As regards the remainder, all that need be said is that they affect only or chiefly the structures under the names of which they appear. These included under "general" were either too diffuse to be put under any more definite heading or else their actual position was not stated in the report from which I obtained my abstract.

TABLE II.

Nature of tumour.	Tuberculous.	Sarcoma.	Glioma.	Glio-sarcoma.	Cystic.	Carcinoma.	Gumma.	Hydatids.	Other tumours.	Total.
Frontal	3[1]	16[1]	8	5[2]	2[2]	2	6[2]	3	16[1]	61[12]
Temporo-sphenoidal	1	8[2]	5	0	2	1	3	2[1]	6[1]	28[7]
Motor area	8[1]	23[12]	15[1]	6[1]	5[1]	3	13[1]	3	40[21]	120[40]
Parieto-occipital	1	11[2]	6	1	1[1]	1	2	3	11	37[4]
Multiple	5[1]	6	2[1]	0	1	1	4[2]	2	4[2]	28[6]
Basal ganglia	7[2]	3	7[1]	1[1]	1	0	0	1[1]	12[1]	36[5]
Corpus callosum	0	4[1]	0	2	0	0	0	0	7[1]	13[2]
Centrum ovale	2[1]	6[1]	3[1]	1	3[2]	0	1	3	11[3]	30[12]
Corpora quadrigemina	2	5	2	0	1	0	1	0	4	15
Pituitary	2[1]	5[1]	2[1]	0	2	2[2]	1	0	12[3]	26[8]
Crura	0	1	0	0	0	0	0	0	4	5
Pons and medulla	12[3]	5[1]	12[2]	1	1	1	2[1]	1[1]	10[2]	45[11]
Cerebellum	25[5]	23[1]	17[1]	1[1]	25[2]	0	3	3	32[1]	138[18]
General	1	7[2]	1	0	0	0	0	0	10[1]	19[1]
Total	72[7]	126[32]	82[13]	30[5]	44[5]	11[2]	36[2]	21[3]	179[40]	601[114]

The nature of the growths in each position will be found in the next table (Table II.); the significance of the small figures in the top right-hand of some of the figures will be explained subsequently (see Table VI.). From this it will be seen that of the 442 named tumours 126 were sarcomata, 82 were gliomata, and 72 were tuberculous—a result which differs from Starr's[1] as below.

	Starr.	J. M. M.	
Sarcoma	22·6	28·5	percentages.
Glioma	17·2	18·5	
Tuberculous	36·4	16·3	

While I was abstracting my cases it seemed to me worth while to notice the chief position of the headache in each case where it was mentioned, as, so far as I am aware, there are no statistics on this point: but the result is only to confirm the prevailing idea that the position of the headache is of no value in determining the position of the tumour (see Table III.). The only points to which I will draw attention are the number of cases of tumour of the motor area and of the corpus callosum in which headache was stated to be absent, the frequency of occipital headache in cerebellar tumours, and of frontal headache in all kinds of tumours.

TABLE III.

Position of tumour.	Position of headache.								
	Stated to be absent.	Frontal.	Frontal and occipital.	Occipital.	Vertical.	Temporal.	Fronto-temporal.	Parietal.	Fronto-vertical.	Occipito-vertical.
Frontal	1	12	2	5	—	1	—	1	1	—
Temporo-sphenoidal	1	3	—	—	1	1	1	—	—	—
Motor area	5	12	2	1	3	—	4	5	2	—
Parieto-occipital	*	5	1	3	—	—	—	—	1	1
Basal ganglia	—	6	—	1	—	1	—	—	2	1
Corpus callosum	4	—	—	1	—	1	—	—	—	—
Centrum ovale	2	5	1	3	1	1	—	—	1	—
Corpora quadrigemina	1	1	—	3	—	—	—	—	—	—
Pituitary	—	1	—	—	—	1	—	2	—	—
Pons and medulla	2	3	2	3	1	—	—	—	—	1
Cerebellum	—	18	7	23	1	—	—	2	4	2
General	—	5	—	—	1	1	—	1	—	—

The results of my analysis of these 600 cases as regards the presence of optic neuritis are in accord with the generally accepted statements, but I have gone rather more into detail than has usually been the case; thus I have separated the cases in which optic neuritis was noticed into four groups, with the idea of seeing whether any new facts would be brought out; these groups are—(1) those cases in which the optic neuritis was stated to be unilateral; (2) those in which the optic neuritis was beginning late in the course of the disease; (3) those in which the optic neuritis was early and marked; and (4) those in which the optic neuritis went on to atrophy or in which atrophy was first noticed (see Table IV.). Before I go fully into the table I will draw attention to the comparatively small number of cases which go on to atrophy in the following groups:—(1) the pons and medulla; (2) the temporo-sphenoidal; (3) the motor area; (4) the corpus callosum; and (5) the corpora quadrigemina (here notice the large proportion of cases in which optic neuritis is found). The number of cases of tumour of the crura is too small for me to draw any general conclusion from them. Optic neuritis is constantly present in tumour of the corpora quadrigemina, so that in the absence of optic neuritis we can

[1] Nervous Diseases, edited by F. X. Dercum, p. 471.

exclude this position for the tumour. The cerebellum and parieto-occipital regions come second with optic neuritis in 39 per cent. of cases, but a marked difference is noticeable in the two groups when we come to Table IV., column iv., excluding optic atrophy; here the cerebellar region leads by 13 per cent. The only other special point to which I will draw attention is the comparatively small proportion of cases in which optic neuritis is found in tumours of the corpus callosum and of the pons and medulla—a fact which is still more marked when we exclude "atrophic" cases. If we exclude the eight cases of the pons series in which internal hydrocephalus was produced, and in every one

TABLE IV.—*General Table for Optic Neuritis.*

—	Totals.	No optic neuritis.	Unilateral.	Optic neuritis beginning late.	Optic neuritis marked.	Atrophy.	Not mentioned.	Percentages (see footnote). I.	II.	III.	IV.
Frontal	61	10	3	7	31	10	0	84	33	67	61
Temporo-sphenoidal	23	9	0	5	10	2	2	63	50	50	46
Motor area...	121	46	3	16	48	6	2	62	54	46	43
Parieto-occipital ...	37	4	3	4	22	3	1	89	30	70	68
Multiple	28	9	1	4	8	5	1	63	50	50	39
Basal ganglia	36	9	0	3	17	6	1	75	33	67	60
Corpus callosum ...	13	7	0	2	3	1	0	46	69	31	25
Centrum ovale... ...	30	10	1	4	11	3	1	67	50	50	40
Corpora quadrigemina	15	0	0	3	11	1	0	100	20	80	79
Pituitary	23	9	0	0	8	9	0	65	35	65	47
Crura	5	0	0	2	1	0	2	100	40	60	60
Pons and medulla ...	44	14	4	8	15	3	0	68	59	41	35
Cerebellum	133	15	2	4	91	25	1	89	15	85	81
General	19	3	1	5	7	3	0	84	47	53	44
Total	601	145	18	67	283	77	11	76	38	62	56

PERCENTAGES.—I., in which optic neuritis was present some time in the course of the disease. II., in which optic neuritis was late, absent, or unilateral. III., in which optic neuritis was present early in the disease. IV., in which optic neuritis was present, excluding atrophic cases.

of which optic neuritis was found, the figures will stand:—Cases, 36; no optic neuritis, 14; unilateral, 4; late, 6; marked, 9; and atrophy, 2 (special reasons), which will make the percentages as follows: Cases in which optic neuritis was present some time during the disease, 56; cases in which optic neuritis was present early in the disease, 26·4. Thus the absence of optic neuritis early in the disease is a characteristic of tumour of the pons. Before leaving this point I will arrange the groups in their order—(1) according to the percentage of optic neuritis (all cases); and (2) according to the percentage of cases in which optic neuritis is late, absent, or unilateral.

(1)	(2)
1. Corpora quadrigemina.	1. Cerebellum.
2. Crura.	2. Corpora quadrigemina.
3. Cerebellum. / Parieto-occipital.	3. Parieto-occipital.
4. Frontal. / General.	4. Basal ganglia. / Frontal.
5. Basal ganglia	5. Pituitary.
6. Multiple. / Pons and medulla. / Temporo-sphenoidal. / Centrum ovale.	6. Crura.
7. Pituitary.	7. General.
8. Motor area.	8. Centrum ovale. / Multiple. / Temporo-sphenoidal.
9. Corpus callosum.	9. Motor area.
	10. Pons and medulla.
	11. Corpus callosum.

I come now to the table of the cases in which optic neuritis was unilateral or more marked on one side than on the other, and among them I have included three (motor area) which were clearly diagnosed at the National Hospital for the Paralysed and Epileptic, Queen-square, but which have not been operated on and have not reached a fatal termination (see Table V.).

TABLE V.—*Unilateral Neuritis.*

Tumour.	Optic neuritis more marked on the side of the lesion.	Optic neuritis more marked on the side opposite to the lesion.	Totals.
Frontal	8	2	10
Temporo-sphenoidal	4	0	4
Motor area	14	3	17
Parieto-occipital	2	4	6
Multiple	2	0	2
Basal ganglia	1	0	1
Centrum ovale	1	2	3
Corpora quadrigemina ...	1	0	1
Pituitary	0	1	1
Pons and medulla...	3	2	5
Cerebellum	3	1	4
General	0	1	1
Total	39	16	55

From this it will be seen that I have been able to collect only 55 cases useful for this purpose, but in future a much larger proportion will be available, as the amount of swelling of the papilla is being measured in each eye much more accurately than has been done in the past. Yet even here there are quite sufficient data to justify one in stating absolutely that the seat of lesion is probably on the side on which optic neuritis is more marked in the proportion of 71 to 29. If we take the first three groups in the table among which we have the largest number of cases the results are as follows: total on the side of the lesion, 26; on the side opposite to the lesion, 5; total, 31. The percentage in favour of the lesion being on the side of the optic neuritis is 84.

Turning now to the question of the effect of the nature of the tumour in producing optic neuritis, I have in Table II. (small figures above referred to) included the number of cases in which optic neuritis was absent or very slight in connexion with each kind of tumour in each region. The individual numbers are too small to give any satisfactory results, but on taking the totals the percentages are sufficiently striking to be worth noticing (see Table VI.).

TABLE VI.

—	No. of tumours.	Optic neuritis absent.	Percentage.
Tuberculous	72	26	36
Sarcomata	126	32	25
Gliomata	82	15	18
Glio-sarcomata ...	30	8	27
Cystic	44	8	18
Carcinoma	11	2	18
Gumma	36	8	22
Hydatids	21	3	14
Total ...	422	102	24

The conclusions then are: (1) that optic neuritis is most often absent if the tumour is tuberculous; and (2) that optic neuritis is most frequently present if the tumour is a glioma, is cystic, or is a hydatid.

The last set of statistics I have worked out is that in relation to strabismus in cases of intra-cranial tumour; there were only thirty cases in which I could get a clear idea of this condition from the reports; the result is as follows (see Table VII.). Hence in cases in which internal strabismus is noticed the tumour is generally on the same side.

Before bringing my paper to a close I will sum up the general results which I have obtained:—1. That 68·8 per cent. of all cases of intracranial tumour are among males. 2. That the most common form of intracranial growth is sarcoma; gliomata and tuberculous tumours are of about equal frequency, but less common than sarcomata. 3. That headache is more likely to be absent in cases of tumours of the motor area and of the corpus callosum than when the

tumour is situated elsewhere. 4. That the tumour is generally situated on the side on which internal strabismus is noted.

Has, then, optic neuritis any localising value in intracranial tumour? It has, yet only to a limited extent at present; but under the improved methods of examination now adopted it will be of more value in the future. Where a difference in the amount of the optic neuritis in each eye is noted it is more than twice as probable that the tumour is on the side of the more marked optic neuritis. Beyond this little can be said, but at the same time it should be remembered: (1) that optic neuritis is constantly present in tumours of the corpora quadrigemina; (2) that it is present in 89 per cent. of cases of cerebellar tumour and of tumours of the posterior part of the cerebrum; (3) that it is absent in nearly two-thirds of the cases of tumour of the pons and medulla and of the corpus callosum; and (4) that it is least frequently met with in cases of tuberculous tumour and most common in cases of glioma and cystic tumour.

TABLE VII.

	Internal strabismus.		External strabismus.	
	On the same side.	On the opposite side.	On the same side.	On the opposite side.
Multiple	2	—	—	—
Corpora quadrigemina	2	1	—	—
Basal ganglia	—	—	1	—
Parieto-occipital	3	1	—	—
Crura	1	—	—	—
Pons and medulla	5	—	—	—
Temporo-sphenoidal	3	1	—	—
General	1	—	—	1
Cerebellum	5	—	1	—
Motor	—	1	—	—
Centrum ovale	1	—	—	—
Total	23	4	2	1

Brighton.

A CASE OF DRY GANGRENE OF BOTH LOWER EXTREMITIES COMPLICATING ORDINARY SCARLET FEVER; DOUBLE AMPUTATION; RECOVERY.

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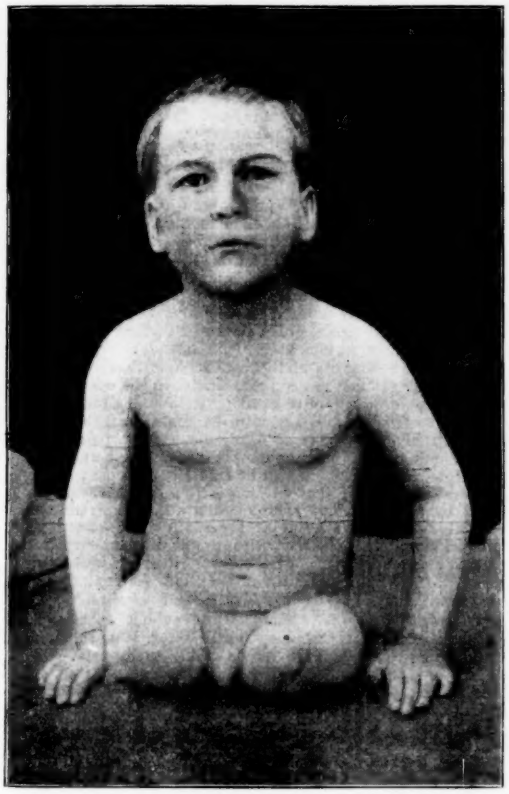
A BOY, aged four years, was admitted to the Leeds City Infectious Diseases Hospitals on Sept. 14th, 1896, suffering from scarlet fever. Malaise, headache, vomiting, and sore-throat occurred on Sept. 9th, the rash being first seen on the 10th. He had suffered from chicken-pox twelve months previously, and from measles three years before. It was elicited from the friends that the family were strongly susceptible to rheumatic affections, the father having died during an attack of acute rheumatism. A sister also had suffered from severe rheumatic fever. On admission the child presented nothing beyond the ordinary symptoms. The tongue was swollen, reddened, and showed enlarged papillæ. The tonsils were congested and œdematous, with small necrotic patches. There was also general faucial and pharyngeal congestion. The submaxillary glands were moderately affected, and a characteristic eruption was noted in the usual situations. On the 17th, being the ninth day of the disease, it was noticed that there were numerous small discolourations (which seemed to be subcutaneous hæmorrhages) extending in both lower limbs from the toes to within two or three inches of the knees anteriorly and posteriorly. At this time the faucial disturbance had very considerably abated, though congestion was still evident, a clean ulcer being noticed on each still slightly inflamed tonsil. The temperature was 101° F. Desquamation of cuticle was observed at the upper part of the chest and neck. Day by day the discolouration of the limbs became more marked, though still continuing to be somewhat patchy, lividity being most intense at the toes and feet, and becoming less so from below upwards. On Sept. 20th, a note informed us that the limbs retained a considerable degree of warmth, probably somewhat exaggarated by the more or less continuous application of artificial heat, and that in neither limb could pulsation in the femoral arteries be distinctly felt. The condition now appeared to give the patient considerable pain, apparently of an intermittent character, and the discolouration had spread to some four inches above the knees anteriorly and to slightly above the centre of the popliteal space posteriorly, the distribution being almost exactly similar in both limbs. From the 20th to the 25th the temperature subsided to normal, and the upper parts of these areas were less discoloured. On the 30th (twenty-second day) an oblique line of demarcation had formed, roughly extending in both limbs to three inches above the knees in front and to the centre of the popliteal spaces behind. At this time there was noticed some slight degree of cardiac dilatation, and a suspicion of roughness of the first sound at the apex. Mr. Littlewood saw the patient on this date, and advised amputation. On Oct. 3rd, after a brandy and milk injection per rectum, the patient was put under ether, and Mr. Littlewood amputated the right thigh by a modified circular operation. All the available healthy skin above the gangrenous part was retained, an incision being carried upwards on the outer side for some four inches. The femur was divided at about the junction of the middle and upper thirds. The blood was very thin, coagulating slowly and imperfectly. The femoral artery was patent. The patient tended several times to collapse, requiring subcutaneous injections of brandy. Silk-worm gut was used for stitches, and the dressings were cyanide gauze and iodoform. The patient recovered well from the operation, and though some rise of temperature was noted on subsequent days, it would appear to have been due to ulceration and some septic inflammation present at the line of demarcation separating the healthy and diseased parts in the other limb. The operation wounds of this amputation healed almost entirely by the first intention except at the outer angle formed by the flaps, where some slight sloughing took place. The parts were drained by indiarubber tubing for some ten days. On Oct. 10th, a week after the first operation, amputation through the left thigh was performed by Mr. Littlewood. The like anæsthetic precautions and incisions were taken and made. The patient bore this operation much better than the first. The wounds were similarly drained and stitched and they also healed by first intention. After the second operation the patient made rapid progress and was allowed to be wheeled about in the ward on Nov. 3rd. When seen later at his home the stumps were found to be well padded and furnished. The patient had free power of flexing, extending, abducting, and adducting the stumps, and would shortly be able to wear artificial limbs. The illustration represents the condition of the patient nine months after operation.

Description of the parts removed.—Both legs were dry and mummified, the skin having a yellowish translucent appearance. Just below the amputation line there was an ulcerated area of skin about half an inch wide and nearly surrounding the limb. On dissecting the vessels they presented similar appearances on both sides. The coats of the vessels appeared normal. In the popliteal arteries, about the middle of the popliteal space, was a soft, reddish-white clot, which did not fill up the whole lumen of the vessel. It could be easily separated from the intima, the clot being about an inch long. Below this to the bifurcation of the vessel there was some loose clot of similar appearance, but above the vessel was empty. There was no clot in the posterior tibials at the ankles. There was a clot in the popliteal veins at the same level as that found in the arteries. It was more like a venous clot, darker in colour, and quite filling up the lumen. It was not adherent to the intima. The clot in the right side appeared to be undergoing some decomposition changes. Both clots occupied about an inch of the lumen. Below this, in the tibial veins, there were some coagula of the same colour, but not filling up the

vessel. Above the clots the veins were empty, as also were the veins at the ankles.

Remarks.—This case appears to us to be of very considerable interest, and almost unique in its occurrence. It is of interest from two points of view—firstly, as an extremely rare complication in connexion with scarlet fever, and, secondly, from the infrequent occurrence of dry gangrene in so young a subject apparently free from diseased blood-vessels. We have been unable in searching the literature of the subject to find records of a similar case. Osler, however, incidentally mentions that symmetrical dry gangrene is a rare complication of scarlet fever, and there is to be found recorded in Holmes's "System of Surgery" a case of gangrene of the left leg complicating scarlet fever in a woman aged forty years. As to the *causa causans*, there would appear to be two factors which operated—an extremely thin and poor state of the circulating fluid and a debilitated condition



of the circulatory system from the specific febrile illness. The former was noted during the operation, and the latter was observed from physical signs during the illness and before amputation. It will be noted in the preceding account of the dissection of the limbs that the thrombosed clot was of some considerable extent in both the arterial and venous vessels of the popliteal areas. It might be urged that the clot was of embolic origin, occurring in a patient whose family were strongly predisposed to rheumatism. In this argument it should be remembered that though there was evidence of circulatory enfeeblement and cardiac dilatation there were no signs of gross valvular lesion, and that the clotting, though extending to the bifurcation, would seem to have commenced at the middle of the popliteal arteries. The vessels in the dissection showed no evidence of disease. Another point of some interest was the absence of any inflammatory disturbance in the wounds after amputation of the limbs, both operations having been performed whilst the patient himself was in an infective state and in close proximity to other cases of scarlet fever. The patient was, however, isolated in a disinfected room for the operations.

Leeds.

A NEW AND EASY METHOD OF EXAMINING MALARIAL BLOOD.

BY NEIL MACLEOD, M.D. EDIN.

FOR diagnostic purposes the examination of fresh malarial blood films immediately after preparation is without doubt most to be relied on. It is not always convenient, and in the midst of a large practice often very inconvenient, to make these examinations when the films are fresh, and thus one is driven to the examination of stained films at more convenient times. The staining of these films is to me, and I find to not a few others, an uncertain and troublesome process—that is, so far as results that can be relied on for diagnostic purposes are concerned. Dr. Reid, of Shanghai, two years ago suggested to me the examination of the dried, unstained film, having tried, but not having himself succeeded, in finding malarial parasites in this way. Drawing a cover glass across a drop of blood on the finger tip, as he suggested, I did not succeed in my quest; but some months later I did so without any difficulty by drawing across one cover glass the edge of another square cover charged with a blood drop. Since last August I have discarded the cover glass for a strip of ordinary notepaper for the purpose of spreading the film. I now carry in my pocket-book a sheet of notepaper one edge of which is snipped with scissors at intervals of half an inch, each snip being one and a half inches deep. The snipped edge is folded inwards to the middle of the sheet, the other half of the sheet being folded over all to keep the strips clean and ready for use. The straight edge of one of these strips is drawn its full half inch through a drop of blood on the finger tip not larger than the head of a pin, the finger tip and the cover glass being previously thoroughly cleansed in the usual way. If too much blood be taken on the strip the film will be too thick and useless. The edge of the strip is quickly drawn across the cover glass, the strip being held nearly at right angles to the surface of the glass and before the blood has had time to dry on the paper. In this way is spread on the cover glass (or slide, if preferred) a fine blood film which dries very quickly, and in it many excellent fields will be found with the corpuscles lying on the flat and practically unaltered. The cover glass must not be fixed to the slide by any medium which will run between the two, causing everything to disappear from view. It must be mounted dry. It can be gummed to the slide by a strip of thin paper with a window exposing the blood smear, when the latter can be examined with dry or immersion lens. With a good quarter inch objective crescents and the larger pigmented parasites, and with an oil twelfth the smaller pigmented forms, can easily be seen. The examination of a few specimens will acquaint anyone with their appearance, so that even beginners have little difficulty in finding these organisms. The specimens being thus preserved can be again and again examined, whereas with wet, fresh preparations a few hours alter them beyond recognition, and the cases are not at hand when study of the organism is convenient. It is well to compare the appearance of these organisms in the dried and undried state. *Particular* organisms can be studied in the dry film on the *slide*, their position located by means of a finder, and the organism in question stained and re-examined—a procedure, so far as I am aware, not yet recorded. The film on a slide can be examined with a dry lens without the intervention of a cover glass; then stained, dried, and examined without cover glass, or with a cover glass with or without balsam. If an oil immersion lens is to be used the film when dried and unstained ought to be on the cover glass, as the air layer intervening between the cover glass and slide, if the film is on the latter, prevents the oil lens working at its best.

The films should be carefully preserved from dust before they are mounted. Pill boxes serve this purpose well. The colour of the protoplasm of the parasite is not quite the same dried as undried, and, of course, no movement of parasite or pigment is possible in the dried state, but this presents no difficulty with pigmented forms. The unpigmented parasites cannot be detected even in the fresh undried film with certainty unless they are seen to move; but even these I have detected in the dried form as rings or signets and then stained them. This method, however, cannot be relied on for the detection of unpigmented forms of these organisms without very considerable experience.

and should be supplemented by staining or the examination of fresh undried films. For satisfactory work with either dry or wet lenses in examining these parasites a good sub-stage condenser saves much time and trouble.

Blood films treated as I have recommended are subjected to less interference than when fixed by heat, alcohol, ether, or other means, or when treated with one or more staining solutions, washed, dried, &c.—procedures which I have found to so alter and obscure parasites distinctly visible in the dried untreated film that they could not be recognised as the parasite previously seen except by their surroundings previously registered. While this may not matter in the histological study of these organisms it is somewhat different when diagnosis is concerned, where, as is not infrequently the case, the number of organisms circulating in the peripheral blood is small, and the less they are altered or obscured the better. I have specimens of these parasites of the most typical character preserved for demonstration purposes—no small advantage where demonstrations are wanted and no cases are at hand for that purpose.

Shanghai.

NOTE ON AUTO-INTOXICATION DURING PREGNANCY.

BY J. CHRISTIAN SIMPSON, M.D. EDIN.

IN Dr. Clifford Allbutt's interesting paper on "Albuminuria in Pregnancy"[1] some strong reasons are brought forward in favour of the toxic origin of this condition. Perhaps I may refer to some other points which seem to me to strengthen this position, more especially in connexion with two conditions—namely, salivation and eclampsia. In ordinary persons "a rush of saliva into the mouth usually precedes the act of vomiting," and the nausea or vomiting of pregnancy naturally has this as an accompaniment. But in certain cases the amount and persistence of the abnormal salivation are so marked that it seems to be an independent phenomenon rather than the accompaniment of the emesis. Without going into physiological details one may remark that according to Ludwig[2] "the saliva is really secreted from the lymph present in the lymph spaces of the gland." On the one hand "we may have secretion without a blood stream" through the glands; while, on the other hand, "if atropia be given to an animal, stimulation of the chorda tympani nerve produces dilatation of the vessels, but no secretion of saliva." It must also be noted that the secretion of saliva "is not a mere process of filtration, such as, perhaps, occurs in the glomeruli of the kidney."

The amount of saliva secreted by some pregnant women may reach many quarts in the twenty-four hours. This usually persists during the early months of pregnancy only, but in some instances it lasts up to the confinement and then disappears in the course of a few days usually, but Green[3] noted a case in which it persisted for two weeks. In any case its persistency marks a difference between this hyper-secretion from that known as "paralytic secretion," which only lasts about eight days. The hyper-secretion of pregnancy contains no ptyalin and a lesser amount of sodium salts than is in normal saliva; it thus resembles what is called "chorda saliva" rather than what results from stimulation of the sympathetic, except when this has been prolonged, for the saliva resulting from moderate stimulation of the sympathetic is scanty and contains a very large proportion of solids. Stimulation of some distant sensory nerves causes a secretion of saliva, and certain uterine conditions—even menstruation—have been considered to be a starting-point of this; in fact, such salivation is usually described as "a purely nervous disorder" which is not readily controlled by any antisialic or nervine sedative.

When one tries to explain salivation on a toxic theory what is found? According to Bouchard[4] one of the toxic principles in normal urine is a sialogogue, but salivation is not seen in experiments with ordinary urine as "the total quantity of urine sufficient to kill does not contain the sialogogue in sufficient quantity to produce its physiological effect"; but if urine deprived of a part of its toxicity, say, by decolouration, be injected salivation is one of the symptoms produced. By a process of exclusion, the details of which it is unnecessary to allude to, he has defined this toxin to be "a stable organic substance, not fixed by charcoal, soluble in alcohol, and distinct from the diuretic (urea) or the narcotic toxin." It is found in much greater amount in the blood, liver, and muscles than in the urine, but so far it has not received a name, and its chemical nature is unknown. Its effects are well seen in rabbits after intravenous injection of the alcoholic extract of normal urine, for salivation appears during the comatose state, persists for three-quarters of an hour, and is apparently equal to that produced by jaborandi. If alcoholic extract of blood be injected, muscular weakness, convulsions, and rapid salivation supervene. As this toxin is found in much greater amount in the blood, liver, and muscles than in the urine it is concluded that it is "from the blood that the kidneys get this substance which causes salivation."

In the case of eclampsia it must be noted that two convulsive principles are found in normal urine. One is a "fixed stable organic body, destroyed by carbonisation, yet retained by charcoal; it is insoluble in alcohol, as either a base or a salt, and may belong to the group of colouring substances." The other is fixed and inorganic, and is, in fact, potash. It is thus evident that faulty elimination of these products might be sufficient to induce eclampsia, but there are possibly other waste products which accumulate during the course of pregnancy, as will be seen later. In this relation it may be well to consider two primary and certain secondary sources of auto-intoxication. On the one hand, there may be a primary derangement of the liver, with secondary intestinal decompositions, and in due time renal irritation and insufficiency from absorption and excretion of toxins may appear and aggravate matters. On the other hand, a primary renal insufficiency may be so marked that if the hepatic and intestinal functions are slightly deranged serious symptoms may arise which might not have been induced had the kidneys been acting normally. The question whether intestinal derangement is an active factor in the case might perhaps be determined if it were possible to estimate the ratio between the free and aromatic sulphates in the urine. Hunter[5] in his researches on the causation of pernicious anæmia, showed that an increase in the ratio of aromatic over free sulphates is evidence of intestinal decomposition and putrefaction, and that "the destruction of blood was effected by the action of such poisons absorbed from the gastro-intestinal tract" But at the same time there must be a considerable latitude for both forms of insufficiency, for it is not every case with an inefficient liver or kidney or intestine that is attacked with eclampsia. As examples of these types one may quote Clark and Skelton,[6] who observed one case of eclampsia in which there was no marked renal insufficiency until after the seizures, though there was at the same time acetonuria. In another case there was marked renal inadequacy, but no fits occurred. They assume that the first case was due to hepatic derangement, as indicated by the presence of acetone in the urine. Vicarelli,[7] however, examined 137 patients and found acetonuria in 9, all of whom were delivered of a dead fœtus. The acetonuria disappeared in four days, but no mention is made of any eclamptic symptoms. Again, in close relation with acetonuria Stumpf[8] found that "the urine of eclamptic cases even before the attacks contains much more sugar than the ordinary urine of pregnant women," which doubtless results from hepatic derangement. An example of convulsions resulting from intestinal disturbance is given by Hirst,[9] who states that a young woman had violent convulsions the day after her confinement. There was coma, suffused face, very rapid and feeble pulse, and an elevated temperature. On examination of the urine nothing abnormal was found, and there was nothing locally abnormal per vaginam. She had been constipated for two days, however, so a purgative was administered; a good motion resulted, and she felt better very soon after.

As one of the convulsive toxins in the urine probably belongs to the group of colouring substances, the relation between hepatic and intestinal derangement and convulsions is intimate. Van der Velde[10] has recently recorded some

[1] THE LANCET, Feb. 27th, 1897.
[2] Landois and Stirling: Human Physiology, vol. i., p. 246, et seq.
[3] Boston Medical and Surgical Journal, April 12th, 1894.
[4] Auto-intoxication in Disease, p. 62, et seq.
[5] Brit. Med. Jour., vol. ii., 1890, p. 81.
[6] American Journal of Obstetrics, February, 1897.
[7] Prager Medicinische Wochenschrift, No. 35, 1893.
[8] Winckel's Text-book of Midwifery, p. 593.
[9] American Journal of Obstetrics, July, 1896.
[10] Revue Obstetricale Internationale, Oct 11th, 1895.

experiments undertaken with a view of elucidating "auto-intoxication gravidique." He found that pregnant rabbits were very much more sensitive to the action of normal human urine than non-pregnant animals. Thus clonic convulsions of the neck appeared after 23 c.c. of urine were injected, whereas 51 c.c. of the same urine produced no effect on non-pregnant animals. Again, the defibrinated blood of a pregnant rabbit induced convulsions when 18 c.c. per kilogramme had been injected, while with blood from a non-pregnant animal nothing happened until 25 c.c. per kilogramme were injected. When the urine of the same animals was injected, that of the pregnant one caused convulsions with 18 c.c. per kilogramme, while no convulsions followed the injection of the non-pregnant animal's secretion to the extent of 30 c.c. per kilogramme. He concludes that there is not only an exaggerated activity during pregnancy, but also an increased susceptibility of the nervous system to convulsive toxins, and that this does not cease immediately after labour. That this is so, and that the blood is the source of the toxicity, are shown by the facts that in one instance there was still rapid reaction to the injection of blood taken three days after labour, though the urine was not more convulsive than normal; and in another case the effects of the injection of blood were detectable even up to the eighteenth day after delivery. "There is thus a renal insufficiency which causes accumulation of toxins in the blood during pregnancy in addition to those found in normal urine, and the combined results may be seen in the symptoms of eclampsia." The occurrence of various neuroses in the puerperium has to be taken into consideration with this fact—namely, the toxicity of the blood developed during pregnancy does not disappear for nearly three weeks after the confinement. This term practically coincides with the involution of the uterus, which of necessity argues a great increase in the amount of waste products, which should be eliminated with the greatest possible efficiency. Therefore, any renal insufficiency will be a very important factor so long as the process of involution is taking place. The toxic theory of eclampsia is also supported by the occurrence of other affections of the nervous system in connexion with pregnancy or the puerperium. Whitfield[11] records a particularly interesting association in the case of a woman who had severe vomiting during the whole course of pregnancy. This ceased the day after delivery, but three days later symptoms of neuritis appeared. It was non-alcoholic in origin and the patient recovered completely. Desnos also noted "a case of muscular atrophy of the limbs of rapid evolution coming on during pregnancy after severe vomiting."[12] It seems to me possible that the severe muscular exertion during labour may in some cases be sufficient to determine such a puerperal neurosis. Given renal inadequacy, to a slight extent even, it is quite possible that a sudden accumulation of waste products may result from the severe muscular exercise in such a comparatively limited period of time. The altered constitution of urine after "fatigue drill" and the difference between the urine secreted during the day from that secreted during the period of sleep and rest are well known, and if neuritis can be caused by the faulty metabolism of gout, rheumatism, and diabetes, such an explanation of the origin of some cases of puerperal neurosis may be held. Some eleven years ago I saw a case of (?) progressive muscular atrophy in a woman. The symptoms began in the lower limbs, and she distinctly attributed the onset of the affection to the excessive muscular exertion and straining of the legs during labour, more especially as they were cramped up against the foot of the bed. Whether this might not have been an instance of puerperal neuritis I have now no means of determining, but it seems possible, and "some facts show that an ascending neuritis is able to be the starting point of progressive muscular atrophy,"[13] which has also been known to follow certain acute infectious diseases such as measles.

Seeing that the source of the auto-intoxication is in the blood, liver, and muscles, and that the symptoms arise in some cases apparently from primary hepatic and intestinal derangement and in others from a primary renal insufficiency, with or without marked hepatic and intestinal defection, what is a rational line of treatment? Practically it may be assumed that the majority of cases suffer from a combination of these morbid processes, and it may be advisable to regard salivation as one of the early danger signals in the course of the case. This is supported by the facts that Robin[14] has observed salivation in uræmia, Nothnagel[15] has seen salivation precede the convulsions of epilepsy, and Winder reports two cases of eclampsia, in both of which "the salivation was extreme, the bedclothes and pillows being absolutely wringing wet." The urine was albuminous and the placenta adherent in both instances.[16] Bouchard believes that "the skin and lungs cannot vicariously aid the kidney which has become incapable of accomplishing elimination." He has calculated that one litre of water per intestine is simply one litre less per kidney, which would have eliminated fifty times more urea as urine in the healthy state, but though diarrhœa does not remove urea from the blood it removes other poisons from it.[17] The line of treatment by hydragogues in uræmia is therefore based on a good foundation, but in no case should salts of potassium be used.

It has been shown that the toxicity of the bile and also of the urine is diminished by decoloration, hence the administration of charcoal is of value, as it acts by decolouring some of the pigments and by fixing others, thus removing a constant source of readily absorbable toxins. My experience of the administration of charcoal in colotomy and other cases has been most satisfactory. In addition to charcoal some other intestinal antiseptics may be used, such as naphthalin, &c., and if the liver is especially inefficient a mercurial will be of double service. As to diet, milk in small quantities and suitably given has the reputation of "being opposed to all sources of intoxication."[18] The lowered temperature such as occurs in instances of uræmia, especially in the comatose stage, is really an evidence of imperfect oxidation; Jaccoud[19] highly recommends inhalations of oxygen in such circumstances, and Macalister has recently reported a case.[20] Perhaps the best effects will be obtained in the case of eclampsia with marked renal insufficiency by combining oxygen inhalations with bleeding. Bleeding in uræmia and during pregnancy was common many years ago as a matter of routine, and after having been ignored more or less completely for some time it has again attained a certain position in therapeutics. It has been found that 32 grammes of blood contain 50 centigrammes of extractive substances, and as the daily elimination of these by the urine is 8 grammes this is equal to one-sixteenth of the daily total,[21] and probably even more in the pregnant state. It is certain that more extractives can be removed by bleeding than by any other channel except the renal, though even then it is somewhat indirect and takes more time. A loss of 32 grammes, which can be effected by two leeches, removes as much toxic matter as can be done by means of 280 grammes of a liquid diarrhœa, or by sweating to the extent of 100 litres.[22] Thus in emergencies bleeding is a most efficient remedy, and possibly the loss of blood which takes place naturally during labour may to some extent account for the more or less sudden disappearance of some toxic symptoms which have persisted during the course of pregnancy.

Cambridge.

[11] Ross and Bury: Peripheral Neuritis, p. 356.
[12] Ibid., p. 360.
[13] Laveran and Teissier: Pathologie Médicale, vol. i., p. 507.
[14] Bouchard, p. 67.
[15] Fagge: Practice of Medicine, vol. i., p. 751.
[16] Medical Press and Circular, vol. i., 1897, p. 373.
[17] Bouchard, p. 132.
[18] Ibid., p. 130.
[19] Ibid., p. 135.
[20] THE LANCET, Dec. 7th, 1895, p. 1423.
[21] Ibid., p. 133.
[22] Ibid., p. 133.

TWO CASES OF FRIEDREICH'S DISEASE.

BY T. ARMSTRONG BOWES, M.D. CANTAB.

ALTHOUGH a considerable number of cases of this disease have lately been recorded in medical literature, the two following cases are worthy of addition to the number, as one of them presents two features of interest—namely, a confinement and a fracture of the femur during the progress of the disease.

CASE 1.—In a woman, now aged twenty nine years, symptoms of the disease commenced at the age of thirteen years with difficulty in walking, and although she was for some time an out-patient at a hospital she has since then become progressively more feeble. She is by no means undersized, and she has fair hair and blue eyes. Her features are a little coarse. Mentally she is inclined to hysterical symptoms, as evidenced by a desponding tendency as regards her condition, and she is apt on slight provocation to dissolve into tears, but in spite of this she is able to

appreciate a good laugh. She reads, writes, and crochets a little, and she is able to use a knife and fork, although there is some difficulty in accurately gauging the position of the mouth when food is conveyed to it on the fork. Sensation is generally good, and the patient considers that of the right half of the body to be more acute than that of the left. The only abnormality seems to be a deficiency of sensation in the feet and in the lower half of both legs, this being due apparently to the local condition of the skin and to deficient circulation. She cannot walk even with help, and on attempting to do so she drags her legs along the floor. The thighs can be flexed but not the ankles, the foot is extended, and flexion by manipulation of the ankle-joint is deficient. Irregular, jerky movements of the head and neck are present, but none of the legs, and none of the arms except on attempted action to lay hold of anything, when the object is often missed, and the same non-success attends an attempt to touch the tip of the nose with the finger, and the attempted approximation of the corresponding finger-tips of the two hands with the eyes closed, while she has sufficient control over her hands to be able to crochet fairly well. Her speech, though thick, laboured, and hesitating, is perfectly intelligible. The tongue is protruded straight, though there is the same jerky irregularity of it as is present in the head and neck. The plantar reflexes are increased, the knee-jerks are absent, and there is no ankle clonus. The rectal sphincters are natural, the bowels requiring an occasional aperient. The bladder shows no loss of control, but there are occasional attacks of retention of urine lasting for two or three days and requiring the use of the catheter, and her mental condition at these times has a tendency towards hysterical manifestations. These attacks of retention have been present for years, sometimes following menstruation, an otherwise natural function. There is no implication of the pupil, but nystagmus of slow character is present, being lateral in direction, brought into play by lateral movements, and not present when the eyes are fixed. Most of the power in the muscles of the lower extremities remains in the extensors of the thigh. The joints move freely except the ankles, flexion of these being deficient from shortening of the calf muscles. Knee-joint flexion and extension are easily performed by manipulation of the limb. The muscles are wasted, their place being apparently supplied intrinsically and extrinsically by a deposit of fat, which is present in good quantity over the external surfaces of the buttocks. The feet and the greater part of the legs are congested, thickened, and a little puffy, this condition being apparently induced by the helplessness of the limbs. The second and third left toes are a little webbed. The fingers share in the deficiency of circulation, but not to nearly so great an extent as the feet.

CASE 2.—The patient is thirty-four years of age and is the sister of the patient in Case 1. The symptoms commenced at the age of ten years with difficulty in walking. The patient is dark-haired, her complexion is muddy and thick, and she is of slighter build and less stout than is her sister. Clinically the patient resembles her sister in all respects as above detailed, but she differs in that her feet are less blue and œdematous, the condition extending only about three inches above the ankle-joint and not reaching nearly to the knee as in Case 1, and also that she has no attacks of retention of urine. Her grasp is strong when she lays hold of anything and she is able to make trimmings for the dead. She was confined on July 27th, 1882, the child, a male, being stillborn. Labour was premature (at the eighth month) and was followed by considerable hæmorrhage. At this time she could walk with difficulty. On Dec. 25th, 1895, she fell and fractured the neck of the left femur. It united firmly, but she has not recovered the previous use she had of the limb and it is now practically helpless, whereas the right limb can be flexed at the hip-joint. On examination the leg is an inch and a quarter shorter than the right. Flexion, eversion, and rotation outwards of the hip-joint are all deficient and when lying on the bed the foot is everted. The great trochanter is a little prominent and somewhat thickened, and its upper extremity is higher than it should be. There is little difference in the circumference of the two limbs, as the right and left calves in greatest circumference measure respectively ten and three-quarter inches and ten and a half inches.

In both cases the heart, lungs, abdomen, and urine are natural, there are no visceral crises, and ocular paralysis is absent.

Herne Bay.

LOCAL HOT DRY-AIR TREATMENT IN ACUTE AND CHRONIC GOUT.

BY W. KNOWSLEY SIBLEY, M.A., M.D., B.C. CAMB., M.R.C.P. LOND.,

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THIS new treatment of joint and other affections by the localised application of very hot dry air I fully described in THE LANCET of Aug. 29th of last year. Further experience has confirmed the promising results obtained in the variety of cases then recorded, and the opinion expressed with regard to them. I now wish to draw attention to the action and results of this treatment in a consecutive series of cases of gout, with the belief that the profession will welcome any advance in the present unsatisfactory method of dealing with a disease which directly or indirectly affects such numbers of individuals. The affected limb is left in a temperature of up to 300° F. from half an hour to an hour. During this time, first the limb treated, and then the whole body breaks out into a profuse perspiration, and the pulse, and to a lesser degree the respirations, are increased in frequency. The general effect on the system is considerable, and is evidenced by the fact that the body temperature is raised often one, two, or even more, degrees Fahrenheit, as shown by a thermometer placed in the mouth. In the series of cases of gout which follow no selection of patients has been made; all, therefore, which came for treatment are described in chronological order.

CASE 1. *Acute gout*.—The first case was a man, aged sixty-five years, who came under observation on June 3rd, 1896. The patient had suffered from acute attacks of gout on and off for many years, the attacks often lasting for several months. A year and a half previously he had had a bad attack of pneumonia followed by a prolonged attack of gout in both feet and one knee, which lasted for three months. The present attack had commenced a few days before in the left elbow, which became swollen and the skin tense, red, and very painful; the back of the hand was also swollen, the knuckles being hardly visible and the veins much engorged. After the first treatment by the hot air the parts about the elbow were not so tense, there was less œdema over the back of the hand, and the veins were not so distended. The patient had a return of the attack in the evening in the elbow, accompanied by severe pain; after a bath on the following day the elbow appeared less inflamed and could be moved better; the pain was also greatly relieved. On the evening of June 5th the arm again became more painful, but the patient had a good night; the following day there was some effusion into the tissues below the elbow. Treatment again produced considerable improvement of the parts. By June 8th the gout had quite subsided in the elbow; there was no pain or effusion left, and the joint could be freely moved. During the night the index finger became inflamed; this became more comfortable after treatment and the swelling rapidly subsided. The patient went into the country for a change. In April, 1897, the patient had remained quite well and had been free from attacks of gout since the treatment. During the treatment he was taking alkaline medicine and a saline aperient.

CASE 2. *Acute, sub acute, and chronic gout associated with eczema*.—This patient was a lady, aged fifty years, who commenced this treatment on June 25th, 1896. There was no history of gout or rheumatism in the family; her father lived to the age of ninety years, and her mother lived seventy-three years and suffered from eczema. Her paternal great-grandfather lived to the age of 105 years. The patient when young had excellent health till the first attack of gout, twenty-four years ago, in the right great toe, when she was laid up for a fortnight. From this time she had recurrent attacks of acute gout every three or four months. For many years it was confined to the feet. It first appeared in the knees twelve years previously and in the hands for the first time seven years previously. The attacks had been much worse the last six years; she was often laid up in bed for from six to ten weeks, and in acute pain. Five years previously she had an attack of eczema in the feet, and this had troubled her on and off ever since, never having disappeared. Eight years ago the chalky gouty deposit in the right great

toe broke down and discharged for twelve months, and this place had reopened on and off several times since. In October, 1895, the deposit in the left index finger discharged for four months, and about the same time the left great toe also discharged. From October, 1895, to June 25th, 1896, the patient had been laid up in bed, being unable to move because of pain, although taking large quantities of medicine. The left index finger was much deformed, and chalky deposit was seen beneath the thinned skin. The little finger of the right hand was also much deformed; there was chalk stone deposit in the middle finger of the left hand. The left knee was extremely painful and tender, movement was very limited on account of pain, and there were some deposits to be seen and felt on the anterior surface of the patella. Both the feet were swollen and covered with an irritable form of eczema, which, especially on the left, extended some way up the leg; both great toes were much deformed, tumid, and inflamed, very red and acutely painful; they were both dislocated outwards and the left was discharging thick pus and chalky matter and looked very angry. There was considerable puffiness about the ankles and pain on the slightest attempt at movement. There were deposits in both ears. On June 25th the left leg was placed in the cylinder. The pain was soon relieved by the heat, and when taken out she was able to move the limb freely and could even walk on it without pain; the eczematous condition was also better. The next day she reported that she had slept all night, that the knee was almost well and the foot much less painful, and that there had been no irritation from the eczema, although for the first time for four months she had not used any ointment. She had a second bath and was again much relieved. She returned for a third bath on July 6th, when she reported that she had had another attack of eczema which was very distressing. After treatment the intense irritation was much relieved; the toe continued to discharge freely. The patient's foot was too bad to allow her to come for a bath from July 8th to 22nd, when, after a bath, the part was much better, and she felt very comfortable. By Aug. 20th the patient had had ten baths. The fourth finger was now decidedly smaller, and the chalky deposit in the knuckle of the second finger was dispersing. On the 25th the patient had her eleventh bath, and said she was able to play the piano for the first time for six months. On the 26th, after the twelfth operation, the following note was made: "The various chalky deposits are decreasing quickly and becoming much softer; the fingers are more flexible and the whole hands are of a much better shape." On Sept. 2nd the patient informed me that she had been trying her voice and had found that it was quite restored; she had not sung for eighteen months. She was also able to run up and down stairs; the hands continued to improve. On the 29th the patient had her twentieth bath. She had had a bad cold, and on the previous day, after doing some needlework, she felt a sudden sharp pain from the right shoulder to the tip of the second finger on the right hand, and this had become stiff and painful. Now the elbow was also painful, the tissues about it being tense and swollen, and tender to the touch. All these symptoms were much relieved by another application of the hot air. The next day she reported having had a good night, and there had been no pain in the finger or elbow since; she had been able to dress herself. On Dec. 16th the patient again presented herself, not having attended since September owing to numerous domestic worries. She had been well with the exception of an attack of pain under the knees and down the calves (? phlebitis) in November. At this time the patient was fairly well in herself, but had some gout about the ankles and heels; the eczema had quite disappeared from the feet. The right elbow was enlarged, red, and painful. On the 23th the swelling about the left elbow, which was present last time, had increased and had become extremely painful. On the 29th the patient reported that her left elbow was much less painful for two days after the last bath, but it had then again become worse; the right elbow had not since been painful. On the 30th the left elbow was very red, swollen, and painful over the olecranon process; there was also a good deal of pain up the arm (lymphatic) and also in this axilla. The pain and congestion of the whole was much relieved by the bath. The next day the patient reported that the elbow again became painful during the evening, but she had had a good night and was feeling much better. During the next few hours the left elbow kept very painful and the skin broke on Jan. 5th, 1897, and it then discharged slightly. A day or two afterwards the right arm became painful, then the left became still more inflamed, and the patient had to keep in bed. She had had no sleep for several nights, so she was taken in for treatment on Jan. 13th. The left arm, which was greatly inflamed and red from the elbow to the middle of the arm, was placed in the cylinder, after which the patient fell asleep. Having slept for three hours, she awoke feeling much more comfortable. She did not have a good night, the elbow discharged very freely a thick chalky material, but in the morning the swelling and inflammation had considerably subsided. The whole condition rapidly improved during the next few days. By Jan. 21st the patient was well and she returned home. The elbow had ceased to discharge and the movements of the joints were unimpaired. She stated that the last time her finger discharged it continued to do so for six months. In April, 1897, the patient had continued quite free from gout since January, and there had been no return of the eczema; her general health had also greatly improved.

CASE 3. *Sub-acute gout, chronic bronchitis, and albuminuria.*—This patient, who was first seen on Sept. 21st, 1896, had probably inherited gout from his mother's side of the family. This patient, a painter by trade, had had severe colic fourteen years ago, and was sixty-one years of age. The first attack of gout occurred ten years ago in the right foot, when he was laid up for a fortnight; a second attack came on three years later, and for the last three years he had had repeated attacks, especially in the ankles. When he came to the hospital the right foot was swollen, very tender, and painful, the skin being red and much inflamed; both legs were œdematous. Internal remedies were prescribed. On Oct. 12th the general condition was much the same. The cough and bronchitis continued troublesome, with a good deal of expectoration in the early morning. There were general bronchial rhonchi, especially at the right apex. The urine was clear, of specific gravity 1012, and contained albumin. The second heart sound was accentuated. The condition of the foot was much about the same, the patient being hardly able to get about, and then only with great pain. On the 13th the first hot-air application was given, no change being made in the medicines. The foot was much easier and he could move it more fully after treatment. By the 19th he had had three baths. The foot was much better, and the bronchitis was also much improved; there appeared to be less albumin than formerly. He had slept much better since the baths were administered. On the 20th the patient stated that his foot felt quite well; he had no pain whatever. He took a mixture of gentian and bicarbonate of soda all through the treatment.

CASE 4. *Acute gout.*—This case of acute gout in a man, affecting the left ankle, was greatly relieved by three baths.

CASE 5. *Acute gout.*—A man, aged forty-three years, was first seen on Nov. 13th, 1896. His father died from rheumatism and Bright's disease. Gout occurred for the first time ten years ago, and the attacks had been repeated at least once a year ever since. This attack came on two days previously with great pain, chiefly in the left foot. He was given an alkaline mixture of soda and gentian and the hot-air baths. The patient felt great relief from the first bath—he could bend the foot with comfort afterwards and the pain was much less. On the 15th the foot had been much better. There was no pain but some stiffness about the ankle when walking. After another bath the foot felt quite well and the stiffness had disappeared and did not return. On April 3rd, 1897, the patient wrote to say that he had not had a return of gout in the feet and had continued at work ever since the previous November.

CASE 6. *Acute gout.*—A man, twenty-four years of age, came under observation on Dec. 7th, 1896. There was no family history of gout or rheumatism. Fourteen weeks previously the patient had suffered from inflammation of the eyes, which lasted three weeks, followed by pain in the back, which kept him in bed for three weeks; afterwards the pain settled in the knees, the left big toe, and then in the left hand and arm. Between Dec. 7th and 21st he had four baths, and in addition a mixture containing bicarbonate of soda and iodide of potassium. By Jan. 4th, 1897, he was quite free from gout.

CASE 7. *Gout, bronchitis, heart disease, albuminuria.*—This patient, who was a woman, aged sixty-five years, came under observation on Nov. 23rd, 1896. Her maternal grandmother, who suffered from gout, died when over eighty, and her mother died at ninety-three years of age. She was quite

well till forty-three years of age, when she had the first attack of gout in the left great toe. She had had frequent attacks since in the feet, ankles, knees, elbows, and hands. For the last eighteen years she had also suffered much from bronchitis. On Dec. 8th she was admitted into the hospital. At this time the patient was very weak and suffered much from dyspnœa; the pulse was rapid (120) and small; the cardiac dulness was increased; there was a soft systolic murmur at the apex and a much louder one at the base, which murmur was readily heard in the vessels of the neck; the heart sounds were very feeble; there were general bronchial rhonchi over both the lungs. The urine was of specific gravity 1010, acid, and clear, and there was some albumin present. The feet were much distorted from old standing gouty changes; there was a large nodule in the left metatarsal phalangeal articulation of the big toe. There was very little movement in the knee-joints, and there was thickening about the heads of the tibiæ. The joints of all the fingers were enlarged, and the fingers deflected to the ulnar side. There was a large firm nodule over the right olecranon and hard nodules on the outer side of the olecranon of the left elbow. The patient had had little or no sleep for weeks, and the breathing was rapid and shallow. On Dec. 11th, after the first bath, the patient seemed to be a little easier. By the 14th the breathing was better after the bath, but she had not slept much. By the 21st the right hand was not so painful and the cough was a little easier; the patient still felt very weak and her skin did not act well. She gradually improved, and left the hospital on Jan. 7th, 1897.

CASE 8. *Sub-acute gout.*—The patient, who was a cab-driver, thirty-eight years of age, was first seen on Jan. 4th, 1897. He was treated in the same way as the patient in Case 6, being given two baths, and by Jan. 14th he was free from pain.

CASE 9. *Acute gout.*—The patient, a woman aged sixty-two years, came to the hospital on Feb 22nd, 1897, and gave no family history of gout or rheumatism. She had congenital absence of the first, second, and third fingers of the left hand. Eighteen years ago she had her first attack of gout in the right great toe, and she had had repeated attacks, often twice a year, ever since. The present attack came on a week ago in the left shoulder, then the right leg, and three days later the right hand became involved. The whole hand was much swollen, very red, and the skin much inflamed and acutely painful; there was some inflammation of the left ankle. She also suffered from chronic bronchitis. The first hot-air application was administered on the 23rd, with the result that the hand was less swollen and felt much easier after the bath. A second bath was given on the 25th. The fingers continued to be very stiff, but there had been much less pain in them. A third application was given on March 1st, when the patient said that she had slept much better and the pain had been much relieved. After this she considered herself cured and returned to her occupation on March 10th. On admission to hospital she was ordered 5 grains of iodide of potassium three times a day and ten drops of colchicum vine every night, and on March 1st she had an alkaline mixture containing five grains of iodide of potassium three times a day.

CASE 10. *Acute gout.*—This patient was a salesman, who came to the hospital on March 21st, 1897, suffering from acute gout in both hands, which was quite relieved by three baths and an alkaline mixture.

It is important to note that nearly all of the above cases were treated as hospital out-patients, and that therefore it was impossible to regulate or in any way control their daily habits as to diet, &c. Most of the patients were also only treated during an attack of gout; it was difficult to persuade them to undergo treatment by the hot air between the attacks, even with a fair expectation of keeping off a return of the disease. For instance, in Case 2, although many promises were made, something always interfered to prevent the continuance of regular treatment. In spite of the considerable shortening of the attacks and of the improvement in her general condition, freely admitted by the patient, only the return of pain would persuade her of the need to continue with the hot-air applications. My experience with these cases is that directly the pain subsides the patient returns to work, and neglects to take medicine or the ordinary diet precautions. The cases above described contain examples of gout in its various stages, from the most acute, through the sub-acute, to the very chronic, these latter, sometimes with acute exacerbations, occurring from time to time. Taking first the very acute attacks (Cases 1, 4, 5, 6, and 9), in all of these the local intense pain and congestion were almost immediately relieved by the hot air; very obvious difference in the appearance of the part was seen after the application, and the relief from the intense agony of an acutely inflamed gouty joint was most marked. But gout, like rheumatism, is always prone to reappear; and it was found in Cases 1 and 6, that the acute inflammation in the part first affected rapidly improved under the local treatment, and in the course of a few days another deposit, but one not necessarily so severe, appeared in another part, sometimes the corresponding limb of the opposite side. Treatment would again rapidly disperse this second deposit, and in no instance did it afterwards follow in another joint. It would seem that in nearly all the cases the attack under hot-air treatment was very much shorter than the previous attacks which had been treated only by internal remedies (Cases 1, 2, 4, and 5). Often, in fact, the attack which previously had lasted for weeks under this method lasted only for the same number of days. In some (Cases 2, 6, 8, and 9) internal medicines, such as small doses of colchicum and iodide of potassium, were also given; in others only a simple alkaline mixture (with possibly a slight aperient such as Condal water) was administered, as in Cases 1, 3, 5, and 10. Nevertheless, in all of these cases the relief from pain and the rapid and complete disappearance of the gout were most marked. Case 2 very well illustrates the treatment of very chronic gout, with gouty or chalk stone deposits; the deposit in one finger, for instance, being so bad that at one time the medical attendant had wished to amputate the digit, and yet after several applications of heat the deposit gradually disappeared, and so also the deposits about the heads of the larger bones became distinctly lessened.

A few remarks are necessary with regard to the mode of action of this treatment. The heat applied locally to the inflamed gouty part causes an increased circulation in the area, bringing a larger quantity of blood to the seat of the lesion and at the same time taking away a larger quantity of blood probably more or less saturated with the bodies causing the local deposits. These deleterious products being in the general circulation, so to speak, dissolved out of the seat of the inflammation should in the normal course of events largely find their way out of the body through the kidneys, hence all should be done during the course of treatment to assist these organs to act as freely as possible. Some interesting observations on this part of the subject have recently been made in the clinics of Professor Landouzy at the Laënnec Hospital, and Dr. Déjerine at the Salpêtrière Hospital, in Paris, who are experimenting with the Tallerman treatment, the results of which were published by Dr. Chrétien.[1] They found, for instance, that in one case of ordinary gout the daily elimination of uric acid, which after the fourth bath was 57 centigrammes, rose after the ninth bath to 89 centigrammes; and in another case of arthritis the daily co-efficient of urea had changed from 20 grammes 97 centigrammes before treatment to 25 grammes 50 centigrammes after the treatment had been administered. They also found an increased excretion of all the salts, especially the chlorides. This increased excretion through the kidneys is probably the explanation of the great benefit of this hot-air treatment in cases of gout. The results in the French hospitals were obtained entirely by this external method and without the exhibition of drugs of any kind. I feel no doubt of the great benefit this treatment will show in cases of what are described as "constitutional goutiness," without necessarily any local objective lesion.

Upper Brook-street, W.

[1] La Presse Médicale, Dec. 26th, 1896.

PAUPERISM IN THE WEST OF ENGLAND.—In the first half of 1896 a sum of £206,609 was spent upon in-door and out-door relief in the five south-western counties. This is an increase of £1250 for the corresponding period of 1895. Devonshire is the only county which shows a decreased expenditure, the decrease amounting to £1224. Devonshire spent £14,378 on in-door and £58,426 on out-door relief. Cornwall expended £5689 on in-door and £23,502 on out-door relief. Somerset's total represents an increase of 2·9 per cent. over the beginning of 1895, the sum in 1896 standing at £12,807 for in-door and £41,931 for out-door relief.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. BARTHOLOMEW'S HOSPITAL.

A CASE OF PYÆMIA AND ACUTE SUPPURATIVE ARTHRITIS WITH COMPLETE RECOVERY OF THE JOINTS.

(Under the care of Mr. BUTLIN and Mr. LOCKWOOD.)

OF the many varieties of streptococcus infection our present knowledge seems to suggest that the serum treatment is of more value in the local forms, such as erysipelas,[1] than in those cases such as pyæmia, in which the infection is probably more general. In the following case, however, the earlier injections were distinctly followed by marked improvement. The result of the active treatment of the joints affected is extremely satisfactory, and contrasts greatly with the treatment of pyæmic joints a few years ago, when ankylosis was generally the best result that could be looked for after the infection of a joint with pyæmia. For the notes of the case we are indebted to Mr. J. Preston Maxwell, house surgeon.

A married woman, aged thirty-three years, was admitted to St. Bartholomew's Hospital on Feb. 13th, 1897, at the end of an attack of acute suppurative tonsillitis, which, she said, began three weeks previously. Almost from the beginning of her illness she had had various complications. The left knee-joint was acutely inflamed and full of fluid, but the skin over it was normal, and the slightest movement caused her intense pain. All the other joints were healthy. There was slight dulness with some pleural friction at the right base, indicating a pleurisy of the right side, which was said to have commenced soon after the tonsillitis, and was now subsiding. The heart was particularly examined and no murmur or dilatation could be discovered. The urine was acid, of normal specific gravity, and without any trace of albumin. Her temperature was 101·5° F., her pulse was 132, and her respirations were 34. It was clear that the disease in the knee-joint was both acute and progressive, and therefore it was decided to ascertain the nature of the fluid contained in it. In the evening of the day of admission an anæsthetic was given, and, the skin having been disinfected, the needle of a sterilised exploring syringe was introduced. Pus was withdrawn; it was thin and quite odourless (two peptone broth tubes and an agar-agar tube were inoculated with the pus, but nothing grew). An incision on each side was made into the knee-joint and the remainder of the pus washed out; the joint was syringed first with a solution of biniodide of mercury (1 in 500), and then with a weaker solution of the same antiseptic (1 in 4000). The synovial membrane was seen to be inflamed and the articular cartilages felt velvety. A rubber drainage tube was inserted on each side of the joint, a large dressing of iodoform, iodoform gauze, and sal alembroth wool was applied, and the limb was placed on a straight back splint. On the following day (Feb. 14th) the patient's condition was about the same, though her temperature was slightly lower (101°); the joint was still very painful. This was attributed to the continuance of septic inflammation and to the fact that the splint had to be removed for dressing and irrigation with biniodide of mercury solution (1 in 4000), which was done twice daily. Therefore on Feb. 15th an anæsthetic was again given and the knee-joint thoroughly irrigated with the weaker biniodide solution, a determined effort being made to disinfect the cavity of the joint. The limb was then swung on a straight back splint with a foot-piece, the splint being covered with a mackintosh to allow of daily irrigation without disturbing the limb. Before the anæsthetic was given it was noticed that there was a well-marked systolic murmur at the heart's apex. On the 16th the patient was worse. She was not sleeping well and her temperature had risen to 104·6°, the pulse was 140, and the respirations were 32. The pleural friction could no longer be heard at the right base, but it was very distinct at the left apex in front. In addition to the systolic murmur there was a distinct diastolic bruit to be heard at the heart's apex. She was taking fluid food fairly well and the bowels were acting naturally. On the 17th it was clear that her condition was becoming highly critical. Hitherto the absence of rigors had been a peculiar feature of the case, and even now she did not have a distinct shivering fit; she had felt alternately hot and cold during the night, and her temperature, which had rapidly fallen to normal, was again rising fast. Her tongue was dry, and since the early morning she had been retching and vomiting. Slight subsultus tendinum was observed, and purpuric spots were noticed over both hands and forearms and the right leg. Her mind was clear, and delirium was absent. Although there was no clear evidence that it was a case of streptococcus poisoning, yet the probability seemed so strong that it was decided to commence the administration of antistreptococcic serum. At 2.45 P.M. the first injection of the serum was given into the substance of the rectus abdominis, with marked effect. The temperature fell half a degree, to 99·6, the vomiting and retching ceased, the colour and aspect improved, the subsultus tendinum disappeared, and the tongue became moist. The respirations came down from 34 to 28 per minute, and the patient volunteered the statement that she "felt better." The knee looked well. (At this time blood cultivations were taken from the finger, but no growth was obtained.) At 8 P.M. another injection of 10 c.c. of the antistreptococcic serum was given. She was keeping better, but during the night the temperature rose steadily, and the injection seemed to have had but little effect. She did not sleep well. At 3 A.M. on the 18th a third injection of 10 c.c. of the serum was given into the rectus. At the time she was delirious, and the injection did not prevent the temperature rising steadily. At 8 A.M. a fourth injection of a similar quantity of serum was given with no apparent result, and at 4 P.M. a fifth injection of the same amount was administered. The patient was now delirious, passing everything under her, refusing medicine, but taking liquid food fairly well. The temperature was 102°, the pulse was 140, and the respirations were 28. The knee was still irrigated daily, and looked well. On the 19th she was still going down hill; the delirium continued and fresh purpuric spots had appeared on the right leg. Her face was sallow, and her eyes were sunken. The systolic murmur was still audible at the apex. At 11.30 A.M. 20 c.c. of antistreptococcic serum were injected into the rectus, but as this injection had no effect whatever on her condition, injections were now discontinued. She was ordered 5 grains of sulphate of quinine in half an ounce of brandy, to be given every four hours. She continued to grow worse during the day, and at 4 P.M. sudden paresis of the right side of the face appeared, with slight twitching of the muscles of the face and neck. She was semi-comatose. The knee, which was still irrigated daily, looked well. On the 20th slight improvement had set it, she was rational, the paresis and twitching of the face had quite disappeared, and there were no fresh purpuric spots. She had taken the quinine well and had no signs of cinchonism. The temperature was 103°. The improvement was maintained, and she slept fairly at night, and her temperature, pulse, and respiration hardly changed for the next three days. On the 23rd the right knee became full of fluid. It was explored, opened, and drained in the same way as the left. The pus was of the same kind and yielded no growth on cultivation. A splint like that used for the left leg was used for this knee also. Both knee-joints were irrigated daily. From this time the patient steadily improved. The temperature came slowly down to the normal, which it reached on March 12th. The quinine was discontinued on Feb. 26th. The drainage-tubes were removed from both knees between March 1st and 5th and the wounds were allowed to close. As soon as they were healed the splints were removed and she was encouraged to use and bend the knees as much as possible. Massage was also employed. After the falling of the temperature she began to put on flesh and rapidly improve in her general health. By April 15th she could walk round the ward unaided, except by a stick, and could bend her knees through an angle of 70°; all the purpuric spots had quite disappeared, and no heart murmur could be heard. She was then discharged from the hospital; about the middle of May she was

[1] Marmorek: Annales de l'Institut Pasteur, Nov. 7, 1895, and Tison: Journal de Médecine de Paris, April 26th, 1896.

seen again, when she walked well without a stick and no defect was noticeable in her gait.

Remarks by Mr. LOCKWOOD.—It would hardly be right to draw any conclusions from this case as to the value of the serum which was given. I had not the opportunity of seeing the case when the joints were incised, or of seeing specimens of the pus. The fact that nothing grew in the cultures must not be taken to be evidence of the absence of streptococci. At times these organisms are exceedingly difficult to cultivate, although known to be present. Nevertheless, in this instance, some entirely different microbe may have caused the suppuration. The point of interest is the wonderfully complete recovery of function in the suppurating joints. This is due to the prompt treatment which the house surgeon, Mr. Maxwell, applied, and to the care which was afterwards taken to avoid any fresh infection from the wounds. Perhaps I may add that antistreptococcic serum was quite unavailing in a case of pyæmia which I saw with Dr. Samuel West and Dr. J. A. Smith, although streptococci were seen in the pus.

CANNING TOWN MEDICAL MISSION HOSPITAL.

A CASE OF ULCERATIVE ENDOCARDITIS TREATED WITH ANTISTREPTOCOCCIC SERUM.

(Under the care of Dr. MARGARET PEARSE.)

THE ordinary medicinal treatment of ulcerative endocarditis is so extremely unsatisfactory, and the rarity of recovery is so great, that any method which offers better prospects of cure is sure of a careful and extended trial. Though for years the causal connexion of streptococci and staphylococci with the disease has been recognised, it is only recently, since the introduction of serum therapy, that any hopes have arisen of combating successfully this most deadly disease. The use of antistreptococcic serum is still on its trial, and therefore every case in which it is employed should be put on record to assist in the formation of an opinion as to the value of the treatment. A case very similar to the following was published in THE LANCET last autumn.[1]

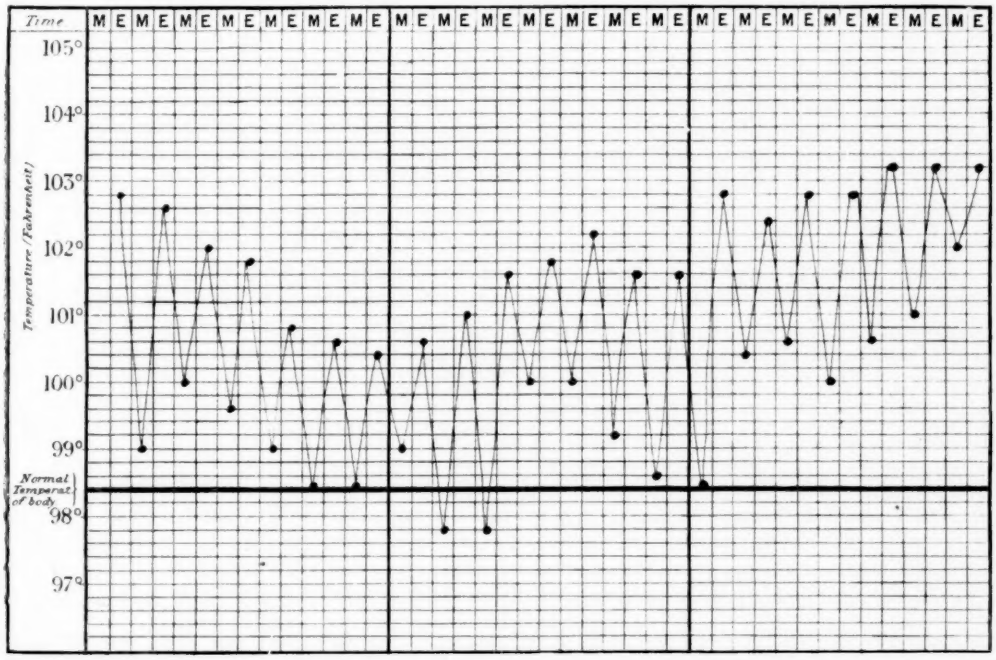
A girl, aged sixteen years, attended as an out-patient on Nov. 27th, 1896, complaining of having "had a cold" for three weeks and of her "breath being tight." There was marked dyspnœa, the pulse and respiration rates were increased, and the temperature was 101° F. Examination revealed rapid and exaggerated cardiac action, a loud mitral systolic murmur, and a faint diastolic murmur at the aortic area. The patient was put on salicylates and treated at home for a week. The temperature remained high, one evening rising to 105°. No improvement taking place she was admitted into the hospital on Dec. 4th. The history of the case obtained after admission was as follows. She had felt quite well till the commencement of November, when she "caught a bad cold that left her chest choked up." She kept at her work, though feeling ill, till Nov. 23rd, when she complained of aching pains in the left shoulder, and on the 25th of palpitation and shortness of breath. On the 27th she visited the out-patient department for advice. No previous history of rheumatism was obtainable, or of any rheumatic manifestations beyond a transient erythema a year before. On admission the patient did not seem to be very ill, being bright and lively. There was considerable dyspnœa, but she was able to lie down. She complained of palpitation and of slight pain in the left shoulder. There was considerable perspiration without acid odour. No nodules, no rash, and no anæmia were present. On examining the heart the apex beat was seen and felt in the fifth interspace, three inches from mid-sternum. The area of cardiac dulness was increased to the right. The sounds were muffled at the apex, but a mitral systolic murmur was distinguishable, as well as a diastolic aortic murmur, and some pericardial friction sounds. At the base of the right lung dulness on percussion and diminished breath sounds indicated a small effusion. During the first week after admission, from Dec. 4th to 10th, the patient showed signs of marked general improvement. The dyspnœa lessened, the slight joint pains disappeared, and the temperature gradually fell from 103° to 100·4° in the evening, and reached the normal in the morning. The pulse-rate fell from 114 to 84 and the respirations from 36 to 24. Some progression was apparent in the physical signs, however, indicating especially increase of fluid in the pericardium. The apex beat was indistinctly felt in the fourth interspace, the area of cardiac dulness extended up to the second interspace, and the sounds at the apex became more muffled. A systolic aortic murmur was heard as well as the diastolic aortic murmur. The edge of the spleen was indefinitely felt below the costal margin. The patient during this time was at first taking ten-grain doses of salicylate of soda every six hours, and then every four hours. During the second week, from Dec. 11th to 17th, the general condition of the patient remained much the same, except that the temperature again gradually rose to reach 102° in the evening and an erythematous rash appeared which by degrees spread over the limbs and face, disappearing after three days. The fluid in the pericardium and at the right base diminished slightly in amount. The urine was normal, and continued so throughout the whole illness. During the third week, from Dec. 18th to 24th, she did not complain of feeling more ill, but the temperature now remained persistently between 101° and 103°, and the pulse-rate again rose to 116. She complained of tenderness on palpation of the spleen. The physical signs remained much the same, but for again indicating slight increase of fluid in the pericardium. As the salicylate treatment seemed to be useless the patient was given five grains of salol twice a day, but the treatment had to be discontinued after two days on account of the severe abdominal pains felt immediately after each dose. On the 24th she was seen in consultation by Dr. Schorstein, and as the increasing severity of the symptoms suggested the probability of the endocardial mischief having assumed a malignant type, it was decided to try the effect of treatment by antistreptococcic serum. An abstract of the daily notes is as follows, and the accompanying chart indicates the wide range of the temperature.

The serum used was obtained from the British Institute of Preventive Medicine, and the injections, with two exceptions, were made under the skin of the abdomen. All other drugs were discontinued. On Dec. 26th the patient complained of pain over the præcordium. Many fresh friction sounds were heard. The area of splenic dulness was increased downwards and forwards, and there was tenderness on palpation. At 6 P.M. 2½ c.c. of antistreptococcic serum were injected. She felt no discomfort either generally or locally afterwards. During the evening sharp pleuritic pains were felt in the left axilla, and many friction sounds were heard. On the 27th all pains had disappeared. At 8.30 P.M. 5 c.c. of the serum were injected. On the 28th the patient was much the same. At 6 P.M. 10 c.c. were injected. On the 29th her general condition was good, though the temperature remained high, and there was no improvement in the physical signs. There was still a considerable amount of fluid in the pericardium, and some effusion at the right base as well as the recent pleurisy on the left. On the 30th her general condition was not so good. She slept during the greater part of the day, but complained of pain over the præcordium and of very sharp pleuritic pains in the left side. Many friction sounds were heard. At 11 A.M. 20 c.c. were injected. There was no discomfort. On the 31st the temperature had made a decided drop, falling to 100°, and at 11 A.M 10 c.c. were injected. On Jan. 1st, 1897, there was an erythematous blush over the abdomen at the site of the last three punctures. Some improvement had taken place in the physical signs; the upper limit of the cardiac dulness was half an inch farther down, and there was less pericardial friction. The breath sounds were louder at the right base. Dulness and bronchial breathing at the angle of the left scapula and many friction sounds in the axilla were noted. On the 2nd the rash over the abdomen had not faded, and a rash showed itself on the limbs and face similar to that which appeared before. It was much more raised than that upon the abdomen which followed the injections, and was very irritable. On auscultation the second sound at the apex was found to be reduplicated. On the 3rd the temperature fell for the first time to normal. The injections were resumed after having been omitted for two days on account of the rash. At 10 A.M. 20 c.c. were injected, and within four hours the temperature rose to almost 104°. On the 4th there was marked general improvement in the patient. Her appetite was increasing. She felt no pains except a little at the site of the previous puncture in the gluteal region. On the 5th the temperature was normal during the greater part of the day, and did not rise beyond 101·6°. On the 6th the rashes had almost disappeared. The patient seemed to be decidedly stronger. There was marked

[1] THE LANCET, Oct. 17th, 1896, p. 1079.

improvement in the physical signs. The apex beat was now in the fifth interspace and the sounds at the apex were much less muffled. Much pericardial friction was heard. The breath sounds were distinct to the base of the right lung and the patch of bronchial breathing left had disappeared, but some friction and moist sounds were still heard. At 4 P.M. 10 c.c. were injected. On the 7th there was a slight rise of temperature in the evening and the pulse and respiration rates increased. During the night the patient was disturbed by uncontrollable cough; there was no expectoration. On the 8th the temperature fell below normal and the patient perspired profusely. At 10 A.M. 10 c.c. were injected and much pain at the site of puncture was complained of afterwards. Between 10 and 12 P.M. the temperature rose to 105° and the cough again became troublesome. On the 9th there was further improvement in the physical signs. The area of cardiac dulness was practically normal, except that the right limit was at the right sternal border. The apex beat was in the fifth interspace three inches from mid-sternum. The sounds at the apex were no longer muffled, and a faint presystolic murmur was distinguishable. On the 11th the patient was very well and felt no pains. The temperature remained subnormal all day and did not again rise above normal. On the 23rd the patient was practically well and said she felt quite strong. There was no dyspnœa or palpitation. On examination all that was found was that the cardiac dulness still extended to the right border of the sternum, and that a double aortic and a mitral systolic murmur were present. The presystolic mitral murmur had quite disappeared. The patient was allowed to get up on this date, and on Feb. 5th she was discharged perfectly well.

Remarks by Dr. MARGARET PEARSE.—The foregoing account speaks for itself of the value of having adopted the serum treatment. Salicylates, after producing temporary improvement, proved useless. Salol could not be borne, and the case assumed an increasingly serious aspect until the injections were commenced and persevered with, for improvement even then was slow and gradual, though ultimately ending in perfect recovery. As to the diagnosis of the case it was difficult to arrive at any other. The illness was distinctly rheumatic in origin, as evidenced by the joint pains and the implications of both pericardium and endocardium. With the diminution of joint pains temporary improvement occurred, but this was soon replaced by progressive increase in the seriousness of the patient's condition. The temperature persistently rose and failed to be accounted for by the appearance of fresh rheumatic manifestations (beyond an erythema), or sufficiently increased severity of those already present, except as regards the endocarditis. Here, as the notes show, soon after the patient's admission into hospital a systolic aortic murmur gradually appeared, and later a presystolic mitral murmur, which afterwards gradually disappeared as the serum treatment was persisted in. This marked alteration in the murmurs, coupled with the high temperature of a hectic type and increase in the size of the spleen, led to the conclusion that the endocarditis was of the ulcerative rather than the simple type. Unfortunately, a bacteriological examination of the blood was only made on Jan. 11th, when, as the report said, "the case having been under treatment so long it was not surprising that no streptococci were found." The verification of the diagnosis by the appearance of infarcts was fortunately averted by putting the patient under the serum treatment immediately the diagnosis seemed in the least warrantable. The possibility of typhoid fever was readily excluded by absence of all the characteristic symptoms except high temperature and slight increase in the size of the spleen. Acute tuberculosis was still less closely simulated, and the issue of the case decided against the possibility, even had there been any doubt.


Time
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105°
104°
103°
102°
101°
100°
99°
Normal Temperat. of body
98°
97°
Temperature (Fahrenheit)

CITY ORTHOPÆDIC HOSPITAL.—The forty-sixth anniversary festival dinner in aid of the funds of this institution was held on June 30th at the Holborn Restaurant. The chairman, Baron Ferdinand de Rothschild, in proposing the toast of the evening, "The City Orthopædic Hospital," said the institution was face to face with the fact that it had to renew a mortgage of £6000, the committee having acquired the freehold of the hospital; they had, further, to appeal for funds to enable them to open additional wards. During the forty-seven years that the hospital had been in existence it had relieved upwards of 70,000 indoor and outdoor patients. It was also a free hospital and one that specially treated children. Subscriptions and donations were announced amounting to £1400, including 50 guineas from the chairman, 100 guineas from Baroness Hirsch, and 50 guineas from the City Corporation.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Spontaneous Dislocation of the Lens into the Anterior Chamber.—Demonstration of Tscherning's Theory of Accommodation.—Microphthalmos with Cystic Protrusion from the Globe.—Tuberculosis of the Conjunctiva.—Exhibition of Specimens and Cases.

A MEETING of this society was held on July 2nd, Mr. E. NETTLESHIP, President, being in the chair.

Mr. BICKERTON read notes of two cases of Spontaneous Dislocation of the Lens into the Anterior Chamber. In the first case (a woman, aged sixty-five years) the right eye had been lost by an injury twenty-five years before. The sight of the remaining eye failed suddenly one afternoon without any injury being received. She was not seen till seventeen days later, when there was raised tension, vision *nil*, the anterior chamber being occupied by a partly opaque lens. The lens was removed without difficulty by a vectis through a corneal incision. In the second case (a man, aged sixty-six years) cataract extraction had been performed on the left eye in 1891, a preliminary iridectomy being done on the right at the same time. In March, 1897, the lens was found filling the anterior chamber of the right eye, no injury having been received. Tension was + 3, and vision equalled doubtful perception of light. The cataractous lens was removed through a corneal incision; the cortex was fluid. The vision with correction after eighty-one days was $\frac{6}{24}$.

Mr. PRIESTLEY SMITH showed a model illustrating Tscherning's Theory of Accommodation, and reviewed the evidence for and against the theory. Helmholtz proved an increase of lens convexity in the area of the undilated pupil; he inferred a general increase of sphericity due to slackening of the zonula. He put forward his theory as provisionally the most feasible, not as proved. Tscherning, following Thomas Young, shows that during accommodation the refraction and the convexity of the lens increase chiefly at the central area of the pupil, less and less towards the periphery, and in the peripheral zones not at all; the lens surface changes from a spherical to a hyperboloid curvature. He shows further that this change can be produced in animals by tightening the zonula. Tscherning's observations relate to:—*1. Spherical aberration:* Did the sphericity of the lens increase during accommodation, the spherical aberration, other things being equal, would increase also. But a study of diffusion circles and shadows cast upon the retina shows no such increase, but the reverse; the peripheral zones of the lens do not increase in refraction as does the central area. *2. Scheiner's experiment:* Looking at a point of light through two adjacent pinholes placed before the pupil, the eye sees it single at the distance for which it is focussed and double at any greater or less distance. With an instrument based on this principle the refraction is estimated in different parts of the pupillary area at the same time. During accommodation the increase of refraction, measured in this way, is much greater at the centre than at the periphery. *3. Reflection from the lens surface in the living eye:* A series of electric lamps placed in a horizontal line before the eye are seen reflected by the lens. The varying degrees of displacement which these reflections undergo during accommodation are an index to the change of curvature in the lens surface. The convexity increases chiefly at the centre, less and less, or not at all towards the periphery. *4. Reflection from the surface of the exposed lens and traction of the zonula:* The zonula being seized and rendered tense at two opposite points of the circle, the change of curvature occurring in the lens surface is studied by means of images reflected from it in several zones. It is of the character already described. Tscherning holds, therefore, that in the act of accommodation the ciliary muscle contracts so as to increase the tension of the zonula, and to alter the lens surface from a spherical to a hyperboloid form. A given increase of convexity in the central area involves much less change the general form of the lens than it would according to the assumption of Helmholtz. Tscherning founds his study on the work of Thomas Young, and does full honour to that eminent man of science. Hess, on the other hand, shows that during strong contraction of the ciliary muscle, especially under eserine, the lens becomes tremulous, and this he declares is incompatible with an increased tension of the zonula. Tscherning confirms the observation, but attributes the trembling of the lens to spasmodic action of the ciliary muscle. Hess replies that the lens, besides being tremulous, is displaced laterally, the displacement in all positions of the head being governed by gravity. This, he urges, can only be explained by assuming that contraction of the ciliary muscle slackens the zonula.

Mr. TREACHER COLLINS and Mr. J. R. ROLSTON read a paper on Microphthalmos with Cystic Protrusion from the Globe, based on the pathological examination of seven eyes in which it was present. It was pointed out that though all the specimens were alike in one particular—namely, in being microphthalmic eyes with a protrusion of retinal tissue through a gap in the choroid and sclerotic—they presented great differences as regards the degree of development of the eyeball. The amount of the protrusion of retina varied from a small knuckle of tissue to quite two-thirds of that membrane. In some of the cases the folds of retina had become distended into one or more fluids containing cysts. The region of the globe in which the protrusions were situated was nearly always its lower and posterior part. Speaking generally, the larger the amount of the retinal protrusion the smaller and more imperfectly developed was the eyeball. In some of them the vitreous was very imperfectly formed, being replaced by a kind of fibrous tissue with blood-vessels coursing through it. This so-called "atypical development of the vitreous humour," in which the mesoblast which should have developed into vitreous humour had instead developed into fibrous tissue, was thought to be a matter of considerable importance, as it served to elucidate cases of congenital amblyopia, which when examined ophthalmoscopically were seen to have fibrous membranes or bands in the vitreous chamber. In one of the specimens they had found a large plate of well-developed hyaline cartilage embedded partly in the sclerotic and partly in the cornea. They referred to two other somewhat similar cases recorded by Lapersonne and Mitvalsky in which nodules of hyaline cartilage had also been found in the sclerotic. It was thought the changes in all their cases could be best explained by supposing the retina, through imperfect development of the vitreous or delayed closure of the ocular cleft, to have become much folded, and that one or more of these folds had become extended through the ocular cleft into the subjacent mesoblast, where in some of the cases it had subsequently expanded into fluid-containing cysts. The paper was fully illustrated by lantern slides.

Dr. J. EYRE read a paper on Tuberculosis of the Conjunctiva. According to his statistics the frequency of these cases was about 1 in 3000. They were divided into five groups—the first characterised by miliary ulceration of the conjunctiva, the second by sub-conjunctival nodules somewhat resembling trachoma granules, the third by superabundant papillary granulations, the fourth appeared as lupus of the conjunctiva, and the fifth as papillomatous tumours of the palpebral conjunctiva. The affection was to be regarded as the result of direct inoculation and not as an expression of general tuberculosis. The age limit varied from ten months to thirty years, the most common time of appearance being about puberty; females were more often attacked than males. The conjunctiva of the lower lid was the most common seat of the affection; glandular enlargement was generally present. Eight cases were described in detail. In group 1, 1 case; group 2, 2 cases; group 3, 2 cases; group 4, 1 case; and group 5, 2 cases. Special attention was directed to group 5 on account of the difficulty in diagnosis without microscopic examination. The necessity of early complete removal of the disease was insisted on.

The following cases and card specimens were shown:—

Mr. JESSOP: Sarcoma of Choroid.

Dr. BATTEN: Case of Spontaneous Hæmorrhage into the Vitreous.

Mr. J. GRIFFITH: Case of Probable Thrombosis of the Cavernous Sinus.

Mr. HOLMES SPICER and Mr. DEVEREUX MARSHALL: Specimen of Tubercle of the Iris.

Mr. THOMPSON: Unusual Type of Corneal Infiltration.

Reviews and Notices of Books.

Manual of Bacteriology. By ROBERT MUIR, M.A., M.D., F.R.C.P. Edin. (Lecturer on Pathological Bacteriology, University of Edinburgh; Pathologist, Edinburgh Royal Infirmary), and JAMES RITCHIE, M.A., M.D., B.Sc., (Lecturer in Pathology, University of Oxford). Pp. 519. 103 Illustrations. Edinburgh and London: Young J. Pentland. 1897.

BOOKS for students and practitioners on bacteriology now abound, and it is difficult to recommend any particular text-book. Some are too large for the general use of students and others are too meagre, and, in order to publish the work at a low price, illustrations are omitted. Without suggesting a slight to other similar works, we can strongly advise those who desire a text-book of convenient size, with lucid descriptions and good illustrations, to obtain the book now under consideration. The authors state in their preface that they have made an endeavour to render the work of practical utility for beginners, and have considered only those bacteria which are associated with disease in the human subject. This is, of course, all that is required by the student, and we congratulate the authors on having so successfully carried out their intentions.

To quote again from the preface: "In the systematic description of the various bacteria an attempt has been made to bring into prominence the evidence of their having an etiological relationship to the corresponding diseases, to point out the general laws governing their action as producers of disease, and to consider the effects in particular instances of various modifying circumstances." As regards this, also, the authors have produced most satisfactory results. The first chapter deals with General Morphology and Biology of Bacteria, and an interesting account is given of the structure of the bacterial cell, the modes of multiplication, and the chemical composition of micro-organisms. Then follow in succeeding chapters the modes of cultivation of bacteria, microscopic methods employed, the methods of inoculating animals, and general considerations of bacteriological diagnosis. The manner of preparing artificial culture media are duly described, and the student ought to find no difficulty in carrying out the instructions given, although, of course, a written description can never satisfactorily displace practical instruction.

The chapter on the Relations of Bacteria to Disease and the Production of Toxins by Bacteria, will well repay perusal, as will also the section on Immunity. The various theories of acquired, artificial, and natural immunity are clearly set forth and discussed, and the authors conclude the subject by admitting that the whole question is still an open one and cannot be fully explained. The descriptions of the individual bacteria are very clear and concise, and will be found useful not only by students, but also by practitioners as a means of acquiring practical knowledge which was not taught at the schools when they were students, but which, as given in this work, they will have no difficulty in adapting to their every-day work, so far as simple appliances will enable them to do.

Separate chapters are devoted to Acute Pneumonia, Tuberculosis, Glanders, Leprosy, Actinomycosis, Anthrax, Typhoid Fever, Diphtheria, Tetanus, and Cholera, whilst other pathogenic bacteria such as those of influenza, relapsing fever, plague, measles, &c., do not require such a long description. A good account is given of the micro-organisms associated with gonorrhœa and syphilis. Suppuration and allied conditions also receive due attention.

The authors "are convinced that to any one engaged in practical study photographs and photomicrographs supply the most useful and exact information"; they have consequently used these almost exclusively in illustration of the systematic description. We quite agree with the authors in the above statements. The photomicrographs are beautifully reproduced and greatly add to the general value of the work.

A Guide to the Clinical Examination of the Blood. By RICHARD C. CABOT, M.D. With coloured plates and engravings. London, New York, and Bombay: Longmans, Green, and Co. 1897. Pp. 405. Price 16*s.*

ANYONE who had been told twenty years ago what important diagnoses or aids to diagnosis can be derived to-day from the minute study of a single drop of blood might well have stood excused for incredulity. A new branch of pathological science has grown up, and its literature is so large and so rapidly increasing that practical workers will be grateful to Dr. Cabot for a book of moderate size in which may be found a good description of the methods which are in use, the main facts which have been ascertained, and their clinical significance. The plan of the book is strictly clinical, and the statistics given are largely from American sources. The author's extensive practical experience of the subject is everywhere apparent, and has been gathered, we read, chiefly at the Massachusetts Hospital. The clinical study of the blood is, indeed, much more extensively practised in America and on the Continent than is the case in this country, and it may be hoped that the appearance of so thoroughly practical a manual as the present work—the first of its kind, so far as we know, in the English language—may give an impetus to a study not merely interesting in itself but of profound value and importance to the physician or surgeon. Part I. deals with the technique of clinical examination of the blood, and the details given are clear and adequate. The author gives good reasons for preferring the lobe of the ear to the finger as the source of the drop of blood. The examination of the fresh blood, the use of the hæmocytometer, and of Fleischl's hæmometer are described in full, together with the best methods of preparing and staining blood-films. Part II. is devoted to an account of normal blood and its variations—a very necessary prelude to the study of pathological conditions. The description is in most respects admirable, but we cannot follow the author in his assumption that the varieties of leucocyte present in normal blood represent merely phases in the life-history of individual corpuscles. It is, of course, possible that such may be to some extent the case, but the relative infrequency of intermediate forms is an argument in the other direction. To describe the eosinophile cells as leucocytes in a state of senile decay is in our opinion unwarrantable, and is opposed to what we know alike of their physiological properties and of their history in animal phylogeny. In Part III. the author treats of the general pathology of the blood, anæmia, leucocytosis, and so forth.

The second and larger part of the book is occupied by the special pathology of the blood. The primary anæmias and leukæmia receive very full and thorough attention. These chapters are followed by an account of the blood in acute and chronic infectious diseases and in diseases of the different organs of the body. Here, though absolute diagnosis can rarely be made by the examination of the blood, yet very important indications are not seldom afforded by it, and the book is a useful work of reference in this connexion. The parasites of the blood are dealt with in a succeeding chapter and the book concludes with a section on the blood in infancy. Throughout the work very extensive references are given to the statistics and observations of European workers in the field, whereby the mass of information is much increased. It is to us a matter for regret that Englishmen have contributed so little, but we think that perhaps more attention might have been paid to some very valuable work which has emanated from this country. The

book is illustrated by a number of excellent coloured plates and is well got up. It supplies a distinct want in our literature and the author deserves hearty congratulation upon the success with which he has accomplished his task.

Practical Points in Nursing, for Nurses in Private Practice. With an Appendix Containing Rules for Feeding the Sick, Receipts for Invalid Foods and Beverages, Weights and Measures, Dose List, and a Full Glossary of Medical Terms and Nursing Treatment. By EMILY A. M. STONEY Superintendent of Training School for Nurses, Carney Hospital, South Boston, Massachusetts. London: The Scientific Press, Limited. Pp. 456. Price 7*s.* 6*d.*

"IN preparing the subject-matter of this volume, whose title-page clearly indicates its design, the author has attempted to explain, in popular language and in the shortest possible form, the entire range of private nursing as distinguished from hospital nursing, and to instruct the nurse how best to meet the various emergencies of medical and surgical cases when distant from medical or surgical aid, or when thrown on her own resources, studiously refraining, however, from advising the nurse to act upon her own responsibility or to assume personal treatment of the patient except under circumstances of great urgency."

This extract from the preface sufficiently indicates the scope and aim of the volume. The preface proceeds in a curiously complacent way to point out various excellencies in the work, with a self-confidence on the author's part which, we admit, is not entirely misplaced, for the book is the best of several good books on nursing which have recently reached us from America. It is brightly written, the subject being presented from the nurse's standpoint, and by one who takes a consistently high view of the position and duties of her calling. Though avowedly limited in its scope the book contains a very complete exposition of practical nursing in its various branches, including obstetric and gynæcological nursing. The instructions given are full of useful detail; indeed, we have not met with many books on the subject in which so few omissions can be pointed out; especially do we note the sensible way in which plain physiological reasons are given for the various modes of treatment enjoined, reasons so often withheld, and without a knowledge of which it is impossible for a nurse to work intelligently. The chapters on the Administration of Baths, Packs, and Douches, and those dealing with enemata and injections in general are particularly good in this respect. Throughout the book an admirably high standard of asepticism is advocated, the details given of the various antiseptic methods being most accurate and up-to-date. Errors, of course, there are, but they are not numerous. It is probably by a slip that the air is described on page 289 as being composed "mainly of oxygen and nitrogen, *there being more oxygen than nitrogen*." On page 45 it is stated that "the Cheyne-Stokes respiration ..... is a fatal symptom"—a much too sweeping statement when thus unqualified. The composition of a nutrient enema is given on page 64 with ingredients amounting to from four ounces to six ounces. This is too large as a general rule, and no mention is made of the use of peptonising agents in this method of feeding. Full directions are given on page 271 for administering an enema to a young baby for ordinary constipation; but it is not pointed out that at this age the actual injection of fluid is seldom necessary, the insertion of the enema nozzle, a twist of soft paper, or the lubricated finger being generally all that is required. On page 276 the nurse is told to "snip" the frænum in a tongue-tied baby, no directions being given except the placing of a little sugar on the lower lip to cause the baby to put out its tongue. It is added that "no anæsthetic is required, neither is there any loss of blood." If nurses are to divide the frænum linguæ—an operation, in our opinion, better left to the surgeon—they should at least be taught the importance of keeping the scissors' point directed close to the jaw-bone rather than towards the base of the tongue, or they will find that hæmorrhage is by no means impossible, even in so simple an operation as this, if performed without due skill. And this is one of several instances in which, in spite of the disclaimer in the preface, the nurse is led beyond her province, and it is the only real fault we have to find with the book. The nurse is instructed, for example (p. 152), how to administer anæsthetics, and advised to use hypodermic injections of one-sixth of a grain of morphia, without medical direction, under a great variety of circumstances, including commencing appendicitis and acute scarlatinal nephritis. The author discusses the morphia question as an open one, and decides that the nurse is justified in initiating the treatment on her own responsibility. This is a doctrine which may perhaps have some justification in America, where it is possible that a nurse may have to work occasionally at a very great distance from medical advice, but it is one which we consider altogether untenable in England. A nurse should under no circumstances whatever administer morphia hypodermically except under orders. To allow her to do so is unfair both to herself, the patient, and the medical man; it invests her with a responsibility which she should in no wise be called upon to assume, and it is a definite infringement of that line which should distinctly divide the provinces of the physician and the nurse. The same remarks apply to the administration of anæsthetics by nurses.

More than twenty pages of the book are occupied by an exhaustive dose list, which, as it suggests prescribing, seems somewhat out of place, and there is a full and useful glossary of medical and nursing terms in which the only error we find is the definition of "pupil" as "the iris, or centre of the eye." The recipes for sick room cookery of all kinds are admirable and trustworthy. The book is handsomely got up, the type is excellent, and the illustrations are good. With due regard to the modification indicated above it will be a reliable text-book for nurses.

The Vertebrate Skeleton. By SIDNEY H. REYNOLDS, M.A. Cantab. Cambridge University Press. 1897. Pp. 527. Price 12*s.* 6*d.*

THIS work, which is one of the Cambridge Natural Science Manuals, should prove valuable alike to the beginner and to the more advanced student. It commences with an introductory account of the skeleton in general, in which the structure of the various exoskeletal tissues—such as claws, hair, teeth, horns and feathers—is described; then the methods of ossification are discussed; and afterwards the general development of the cranium and the rest of the endo-skeleton is briefly and very clearly described. The second chapter contains the classification which the author decides to adopt in the succeeding pages. Probably every worker at zoology would or could criticise every system of classification not his own; but the present one has at least the merit of showing the reader exactly what the author means, while it has also the advantage of indicating the relationship which various extinct animals bear to those at present inhabiting the Earth. The rest of the work describes the skeletal structures in the different divisions of vertebrata, beginning with amphioxus and balanoglossus, and ending with the primates, certain animals being wisely selected as types and their bones described in detail, it then only remains to point out how other animals in the class or order differ from them. A considerable number of references to recent literature is given in the form of footnotes; these, though undoubtedly valuable, might have been more representative.

The book is illustrated by 110 clear, straightforward

figures, each of which has the points of interest indicated by numerals which correspond to names under the illustration. It would be quite possible to get a very fair knowledge of comparative osteology from a study of the figures alone in this book The printing and paper are all that can be desired, while the author's style, always clear, is perhaps as attractive as the condensation of a large mass of osteological facts will allow. We feel sure that the book is well worth the attention of all who are interested in the subject.

LIBRARY TABLE.

The Administration of Nitrous Oxide and Oxygen for Dental Operations. By FREDERIC W. HEWITT, M.D. Cantab. London: Claudius Ash and Sons. Pp. 88. Illustrated.—After a brief *résumé* of the history of the employment of nitrous oxide gas, and of that body mixed with oxygen, the writer describes his apparatus and gives directions for the effective use of this mixture of gases. Hillischer, of Vienna, was the first to introduce the method in his well known pamphlets on "Schlafgas" as he called nitrous oxide and oxygen, and his experience of over ten years confirms his favourable opinion of this anæsthetic. Dr. Hewitt, however, found Hillischer's apparatus unsatisfactory, and with considerable ingenuity devised one of his own. He claims that by its use a more prolonged anæsthesia (forty-four seconds) can be obtained, all asphyxial symptoms can be abolished, and a safe and reliable anæsthetic for use in minor surgery obtained. He justly remarks that the mixture requires more experience for its use than does nitrous oxide, and the apparatus is more complicated and more liable to get out of order. The descriptions are clear and thoroughly practical, and should form a satisfactory guide to those who are interested in this branch of surgery.

Encyclopädisches Englisch-Deutsches und Deutsch-Englisches Wörterbuch. Zweiter Teil: Deutsch-Englisch. Bearbeitet von Professor Dr. DANIEL SANDERS. (*Encyclopædic English-German and German-English Dictionary.* Part II.: German-English. By Professor Dr. DANIEL SANDERS.) Berlin: Langenscheidtsche Verlagsbuchhandlung. London: H. Grevel and Co. New York: The International News Company. 1897.—This valuable and comprehensive dictionary is being published in parts, of which there will be about twenty-four, and from four to six will appear annually. Each part contains from 96 to 112 pages, and costs 1*s.* 6*d.* The German-English portion will occupy about 2500 pages, and will be completed in the year 1900. The English-German portion, by Professor Ed. Muret, has been brought out in the same way, and is now on the point of completion; the first half-volume extends from A to K, the second half-volume (L-Z) is promised for July, 1897; and these two together will contain about 2500 pages. The first part (A-Anbannen) of the German-English portion is before us; it shows that the work is carried out with conscientious thoroughness and is quite in accordance with the most advanced development of lexicography.

Report relating to the Registration of Births, Marriages and Deaths in the Province of Ontario for the year ending Dec. 31st, 1895. Printed by order of the Legislative Assembly of Ontario. Toronto: Warrick Brothers and Rutter. 1897. Pp. 36 and ccxviii.—In the year 1895 the province of Ontaria contained 2,211,101 inhabitants; for each 1000 of this population the birth-rate during the same period was 18 8, the marriage-rate 6·3, and the death-rate 10 1. A copious and detailed summary of the registration returns is now published in a conveniently arranged volume which comprises upwards of 234 pages of tabular matter and will commend itself to those who are interested in the study of vital statistics. A new Registration Act which came into operation in May, 1896, is here printed in full.

La Nature et la Vie: Régénération de l'Homme par le Végétal. Par GABRIEL VIAUD. Paris: Charles Mendel. 1897. Pp. 255.—The author of this well-written book is a veterinary surgeon in a French artillery regiment, who has much to say on the physical advantages of a vegetarian diet as well as on the elevating influence of a fondness for flowers. The work consists of two essays, "Thérapeutique Végétarienne" and "Littérature Végétarienne," the first of which is of some medical interest, being an account of the author's experiments with a view to the medicinal administration of mineral tonics, such as iron, in the form of salads. For this purpose young plants of lettuce and endive were watered with a weak solution of tartrate of iron and potash, containing at first five grammes of the salt in four or five litres of water (= from seventy to ninety grains per gallon), but after a certain period about two or three times as much. Also when the fully-grown plants were taken up for use the cut ends of the stalks were immersed in the same ferruginous solution for twenty-four hours. M. Viaud states that plants treated in this way contain a large amount of iron which is not in the form of a definite chemical salt absorbed by capillarity, but is in actual organic combination with the vegetable tissues, and is therefore much more readily assimilated when the salad is eaten than any pharmaceutical preparation could be. With the same object he grew cress on a coarse cloth kept in contact with water contained in a large tub in which pieces of rusty iron were placed, some of the tartrate of potassium and iron being subsequently added. At a farm in Vienne in the east of France he found that cows and horses were greatly benefited by lucerne and clover which had been treated with a solution of sulphate of iron, phosphate of soda, and nitrate of lime.

Climbing in the British Isles: Wales and Ireland. By W. P. HASKETT SMITH, M.A., and H. C. HART. London and New York: Longmans, Green, and Co. Pp. 197. Price 3*s.* 6*d.*—Holiday-makers with mountaineering tastes will find this little volume an excellent companion on an excursion to Wales or Ireland. The authors, both of whom are members of the Alpine Club, have brought together in a compact narrative an extensive collection of practical information relative to mountain climbing in each of these countries. The ascent of steep rocks and dangerous enterprises upon cliffs have an especial charm for them; so it happens that the grassy hills of South Wales are dismissed with a brief notice, while, on the other hand, the Carnarvonshire mountains are described in much detail, forty pages being given to Snowdon alone. The section on Ireland is the work of Mr. Hart, who gives a survey of the whole country from the mountain-climber and cragsman's point of view. The highest summits in Ireland are found in Macgillicuddy's Reeks in County Kerry; Beenkeragh having an elevation of 3314 ft. Many views, both in Wales and Ireland, are given in the illustrations.

Black's Guide to Bournemouth and the New Forest Edited by A. R. HOPE MONCRIEFF. London: Adam and Charles Black. Pp. 72.—The descriptions of this picturesque and popular portion of the south coast are copious and well-selected. They include several places of interest at a distance of some miles from Bournemouth, and are amply illustrated with maps and plans.

The Fernley Observatory, Southport, Report for the year 1896. By JOSEPH BAXENDELL, F.R.Met S. Printed for the Southport Corporation by Wm. Milne, Nevill-street.—The increased attention which is being paid to climatology gives special interest to this report, and the example of the borough of Southport in appointing a borough meteorologist might be followed with advantage. A like series of reports issued annually from all our watering places and balneological

resorts would prove of immense value to medical men in all parts of the kingdom.

The *Cyclist's Pocket Book and Useful Memoranda*, 1897. London: Archibald Constable & Co., Whitehall-gardens.—This is a little book for cyclists that will go into the breast pocket, containing useful information and memoranda, with a cyclist's almanack and telegraph code and an abstract of the law relating to horseless carriages. A few short pages are devoted to medical hints for purposes of first aid, which will be found useful in cases of slight accident or ailment. For the more severe forms, and for general instructions as to the safe and sensible use of the bicycle, riders should be guided solely by their medical advisers.

JOURNALS AND REVIEWS.

In the medical reports published by order of the Inspector-General of Customs in China for the half-year ended March 31st, 1896, are several important papers, besides that by Dr. J. Matignon on Typhus Fever, which we reserve for notice at greater length. In his report on the Health of Hankow Dr. J. D. Thomson reports two cases of death from heatstroke which occurred to workers in some iron-works. During 1894—Dr. Thomson's report is for the nineteen months ended Sept. 30th, 1895—enteric fever of a severe type prevailed during the summer and autumn. Out of sixteen cases treated in hospital there was one death. A hospital sister, aged sixty-seven years, was seized with acute cholera and only saved by saline injections into the cellular tissue. Dr. H. M. McCandliss, in his report on the Health of Hoihow for the year ending March 31st, 1896, mentions that in five months there were 3000 deaths from plague, the mortality being from 70 to 75 per cent.

The *Practitioner* for July, apart from the scientific interest of its contents, has a special value for ourselves because the "Hero of Medicine" for the month is Thomas Wakley, the Founder of THE LANCET, while a well-informed paper upon the duties of the medical man to the State takes as its text the Parliamentary achievement of the same reformer. Both articles to some extent owe their inspiration to Dr. Sprigge's recent volume, "The Life and Times of Thomas Wakley," concerning which book terms of compliment are used that cannot fail to be highly pleasing to the author, as they are to ourselves, under whose editorial supervision the work was issued serially. We have been much gratified by the generous appreciation of Thomas Wakley's services that has been manifested by the press and the public recently; and the straightforward testimony to the value of those services contained in the current *Practitioner* has touched us nearly because of its obvious emanation from well-informed pens. Mr. W. Rose has a paper in this issue on Early Colotomy in Malignant Disease of the Rectum in which he favours the iliac incision and complete division of the bowel. Dr. Litteljohn's instructive paper on Contagious Disease in a Poor-law School we notice at length in another column. There is also an amusing paper by a ship's surgeon upon the eccentricities of Quarantine before to the late Venice Conference.

The *Medical Magazine* for June has two exhaustive articles on the Progress of Medicine and Surgery during the past sixty years, the fifth instalment of Dr. W. Bruce's articles on Medical Reform, and a very admirable and practical paper by Mr. H. E. Counsell, F.R.C.S. Eng., upon Aseptic Surgery.

In the *Scottish Medical and Surgical Journal* for July one of the most interesting articles is a case of Simple Duodenal Ulcer, in which the symptoms pointed rather to its being a case of appendicitis; death followed in nineteen hours. The case occurred in the practice of Dr. G. M. Cullen. Another interesting paper is a digest of the details of some 300 cases of duodenal ulcer collected by the same practitioner. Dr. Graham Brown describes an ingenious modification of the pantograph for taking tracings of curved surfaces such as the thorax or cranium.

In the *Edinburgh Medical Journal* for July Dr. Byrom Bramwell commences a series of lectures on Aphasia, founded on the cases the details of which have recently appeared in our columns. Dr. Alexander Robertson gives some interesting examples of the use of Hydropathy in Practice, and Dr. Kanthack and Dr. H. M. Tickell contribute a paper upon the Etiology of Infective Endocarditis, which paper they modestly call "brief notes." As, however, it contains a fairly exhaustive analysis of eighty-four cases we think it deserves a larger name.

In the current number of the *Cornhill Magazine* Dr. E. T. Withington gives some curious details of mediæval trials of animals, insects, &c. The animal most frequently arraigned was the sow for the crime of eating babies, but as late as the eighteenth century a colony of ants was successfully exorcised as an alternative to legal proceedings in South America.

In the *Westminster Review* is a curious paper by Mr. H. J. Keene drawing a parallel between Byron and Napoleon. There have been many views of Waterloo, but to learn that it was not a battle is certainly the most startling theory we have come across.

The *Contemporary Review* contains a paper by Mr. R. H. Heath upon the similitude between Bunyan's "Holy War" and that orgie of mysticism the Anabaptist movement in Münster. Mysticism is a frame of mind always liable to excess, but mysticism unrestrained by authority or tradition is simple mania.

The current number of the *Leisure Hour* is full of interesting reading. "Puffs and Drugs" is an amusing article on the ways of the nostrum vendor, by Prebendary Harry Jones, and exposes some of the tricks of trade which are resorted to by a class of people who make a living out of the gullible public.

Sunday Hours still continues to maintain the standard of excellence with which it started a few months ago, and no more healthy and instructive magazine could be placed in the hands of girls and boys for Sunday reading.

The *Girls' Own Paper* and the *Sunday at Home* are also magazines which maintain their high tone of excellence.

New Inventions.

A WATER ANALYSIS CASE.

IN THE LANCET of Jan. 23rd, 1897, reference was made to a simple method of water analysis so devised that analytical operations could be carried out with a fair degree of accuracy upon the spot or at home without the need of special or complicated apparatus. This departure was due to Dr. Thresh, the medical officer of health of the county of Essex, and recent experimental trials in THE LANCET Laboratory enable us to say that the method places within the reach of medical officers of health, water engineers, and others a convenient, easy, and tolerably accurate means of sorting good waters from bad. All the apparatus and reagents required are contained in a mahogany case measuring ten by twelve inches and five inches deep. The case is now supplied complete, with printed forms for filling up the ascertained results, by Messrs. Burroughs, Wellcome and Co., Snow-hill-buildings,

E.C., for two guineas. The case comprises the following reagents:—Capsules of Nessler's reagent, soloids of silver nitrate each corresponding to two milligrammes of chlorine; soloids of potassium chromate; soloids of acid sulphate of sodium; soloids of potassium iodide and starch; soloids of zinc dust; soloids of soap each corresponding to 5 milligrammes of calcium carbonate; soloids of potassium ferrocyanide; and soloids of potassium permanganate, each corresponding to 0·10 milligramme of oxygen. The apparatus consists of a boiling flask of 100 cubic centimetres capacity with cork, a glass cylinder to contain 100 cubic centimetres and graduated in cubic centimetres, a small nickel evaporating dish, three glass cylinders of a capacity of 100 cubic centimetres and graduated at 70 cubic centimetres, stirring rods, tripod, a cleaning mop, spirit lamp, small glass funnel, filter paper, and a stoppered bottle to hold 120 cubic centimetres. The *modus operandi* and the measure of reliability of the results will be best understood from the data furnished below, first by employing the apparatus and the reagents in the case, and then by carrying out the analysis of the same water in the laboratory in the ordinary way. The water under examination was a specimen obtained from the new waterworks at Worthing. Analysis No. 1 gives the results obtained with the apparatus of the water analysis case, and Analysis No. 2 the results obtained by the ordinary methods of analysis in THE LANCET Laboratory.

RESULTS OF ANALYSIS 1.

Colour in 6 inch column ...	Bluish green.
Turbidity	Very slight, turbid on boiling.
Odour	None.
Residue on evaporation... ...	Moderate.
Free ammonia...	None.
Chlorine	1 soloid required, equal, say, to 2 grs. per gallon.
Equal to common salt	3·3 grains per gallon.
Nitrites	None.
Nitrates	Estimated just under 0·5 grain per gallon.
Hardness	Just 4 soloids required, equal to over 14 but under 18 grains per gallon.
Lead, zinc, iron, and copper	None.
Oxygen absorbed	Decidedly under 1 soloid (equal 1 grain).

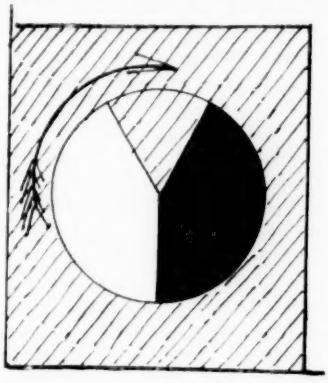
RESULTS OF ANALYSIS 2.

Colour	Slight greenish tint.
Turbidity	Very slight, increased on boiling.
Odour	None.
Residue on evaporation... ...	19 60 grains per gallon.
Free ammonia...	None.
Chlorine	1·82 ,, ,,
Equal to common salt	3·00 ,, ,,
Nitrites	None.
Nitrates	0 35 ,, ,,
Hardness	16·5 ,, ,,
Lead, zinc, iron, and copper...	None.
Oxygen absorbed	0 02 ,, ,,

These results fully establish the reliability of the simple method in affording a means of discriminating waters of bad, good, or indifferent character. The operations involved do not require much time to be spent on them, and they may be conveniently carried out at the source of supply. Medical officers of health have not, as a rule, the time or appointments to carry out the analysis of water at any length, in consequence of which they are led to recommend that an analysis should be made by a recognised official, a recommendation which is seldom carried into effect by the authorities advised. By the simple method described the medical officer is enabled to derive an opinion based upon the fairly reliable results obtained by himself at very little sacrifice of time and without much complicated apparatus being required. The introduction of the method is, therefore, important as adding very materially to the armamentarium of the sanitary officer. It should prove also of eminently useful service (as, for instance, in determining quickly the degree of hardness of waters) to water engineers and others concerned in providing a water-supply free from reproach.

AFTER IMAGE.

AMONG the exhibits at the last conversazione of the Royal Society was a piece of apparatus producing some very striking effects by means of after images. The exhibito was Mr. Shelford Bidwell, F.R.S., who has given much attention to phenomena of this class and who has succeeded in designing a simple and most beautiful mechanism for producing them. He uses a thin metal disc, originally circular in form, and of, perhaps, a foot in diameter, but from which a sector of about 60° is cut away. The front surface of the remainder of the disc is divided radially into two equal portions, one of which is made black and the other white. The disc is illuminated by a good light, and is caused to rotate in such a direction that the open sector is preceded by black and followed by white. The accompanying wood-cut shows the shape and direction of rotation as so defined.



If now a coloured object be placed behind this rotating disc and viewed intermittently through the open sector it will appear to assume a tint complementary to its actual hue. Thus, for example, a picture of a rose painted with a green flower and red leaves is seen correctly tinted as a pink blossom surrounded by green leaves. The significance of these very striking phenomena has been discussed by Mr. Bidwell in two papers which have been published in the Proceedings of the Royal Society.[1] That the after image, seen as it is upon a white disc as background, should exhibit colours complementary to those of the original picture is in no way surprising; that is, indeed, a familiar observation and susceptible of easy explanation. But what is less easy to understand is the fact that at a certain speed of rotation, varying slightly with various individuals, but lying generally between six and eight turns to the second, the after image so completely masters the primary impression that the eye is perfectly unconscious of the original object. Two considerations suggest themselves in this connexion. In the first place the white sector occupies a much larger angle of the disc than the sector cut away, so that it is possible that the duration of the after image is longer than that of the original stimulus, and in the next place the visible colours, more or less complementary, are distinctly paler than the hues of the original picture. It is quite possible that what is perceived is not the true complementary image any more than the true original image, but a blend of the two in which by reason of its longer duration or some other circumstance the hues of the complementary image prevail. The obvious paling of the tints tends to confirm this suggestion.

Even more interesting to the physiologist than the experiments exhibited at Burlington House are some described by Mr. Bidwell in his last communication to the Royal Society, in which black objects were submitted to examination by means of the rotating disc and red or green appeared as complementary hues to the black, according to the varying conditions of illumination and frequency of revolution. They are, no doubt, as Mr. Bidwell points out, susceptible of more or less complete explanation upon the Young-Helmholtz theory of vision, but the explanation is by no means simple, and leaves enough still obscure to stimulate the ingenuity of observers, whether in devising crucial experiments or elaborating theories.

[1] Proceedings of the Royal Society, vol. lx., p. 368, and vol. lxi., p. 269.

THE LANCET.

LONDON: SATURDAY, JULY 10, 1897.

ON the occasion of the QUEEN'S Diamond Jubilee procession on June 22nd last our foreign visitors and all of us were greatly impressed with the self-government of the crowds of spectators in our streets—with the patience, good temper, and orderly behaviour of the masses of people who came out to do homage to a great Sovereign and a good, large-hearted woman. It was a striking phenomenon, and we had not to go far to seek for an explanation of it, for it was founded on mutual trust, sympathy, and goodwill, and on the recognition that all had a common purpose and were sharers in a spirit of common pride and interest in the celebration of events of which the pageant was but an outward sign, symbol, and token. All present were sufficiently intelligent and educated to share in one and the same community of feeling. This has not been the growth of a day, but the result of progressive development—of a slow but sure process of evolution in civilisation and freedom. Nothing of this kind exists in Eastern countries, and it would be well, we think, if people in this country would pause to consider the fact in connexion with the occurrences that have been recently taking place in India—at Poona and Calcutta. It is very easy to give these occurrences an exaggerated significance out of all proportion to their real importance, and it is difficult to dispel the fears of impulsive timid people who are always ready to discover the germs of another Indian Mutiny in every expression of discontent. But there is, happily, no evidence whatever to prove that the outrages and assassinations at Poona and the riots in a suburb of Calcutta are attributable to a common cause or connected with one another. The alleged, and probably the real, cause of the occurrences at Poona was connected with the measures adopted by the Government for dealing with the epidemic of bubonic plague; those at Chitpur and Calcutta were mainly attributable to a tumult among low-class Mahommedans, who made a pretext of an alleged desecration of the site of a mosque for creating a disturbance. Still, it cannot be denied that there are manifestations of a spirit of unrest in India at the present time sufficient to cause some anxiety.

Those who have resided in India for any time and are acquainted with the native population are perfectly well aware that the people generally are a patient, quiet, law-abiding, and, on the whole, contented people and well satisfied with our rule. There is no "public opinion" in the country. What pretends to be so is in no way representative of the mass of the people, but is commonly the outcome of a comparatively small, disaffected, noisy, and very cowardly class who have little respect for truth and a passion for strife and discord. The masses are very poor, very ignorant, and intensely conservative. They want, above all things, to be let alone, and they would sooner run the risk of disease and death than alter any of their customs or depart from their traditional beliefs and habits. They do not want to rule themselves and are unfit to do so, they are ignorant of all sanitary laws, and do not believe in their efficacy. The Government of India probably knows quite well what to do in cases of epidemic disease, but the difficulty is how to do it in the face of all the ignorance, popular prejudice, and poverty to be contended with. The effect of all this is more or less paralysing, of course; still, progress is made, but it must of necessity, under such circumstances, be very gradual and slow. The trust and confidence of the people have, as far as practicable, to be cultivated, but it is, of course, occasionally necessary to take prompt and decided steps to meet cases of emergency, and the support of the more enlightened, educated, and responsible classes in India is commonly with the Government on such occasions. The late epidemic of bubonic plague was indubitably an occasion of this kind. There are many people who think that had the more active and decided measures, which had to be ultimately followed, been adopted earlier, the spread and dimensions of the evil would have been greatly reduced. The difficulties of the Government of Bombay were obviously very great, and consideration for the feelings and prejudices of the people probably caused them to hesitate. They were compelled, however, in the general interest to adopt decided measures, and these have proved successful, as everybody foresaw they would. It has been urged that these measures were carried out in a needlessly harsh and cruel way, and allegations of gross misconduct on the part of the troops have been made, of which the recent outrages at Poona are said to be the natural outcome. It seems to us most mischievous and reprehensible for people in this country to bring charges of this kind against a Government engaged in stamping out a virulent epidemic without first of all making themselves thoroughly acquainted with the facts. India can never be governed properly in this way. The task is hard enough as it is, but it will be attended with insuperable difficulties if the British authorities and soldiers in that country are to be misrepresented and maligned by ill-informed and irresponsible politicians and faddists here. Systems of government are, no doubt, all the better for being exposed to the keen but healthy breeze of public criticism. It is to them what ventilation is to our houses and habitations, and we need not say that we hold no brief for the defence of the Indian Government or of the British Army in that country. Such attacks and criticism must be fair and just, however, if they are to have any wholesome effect and to avoid being positively injurious. It seems, however, far less likely that India will be taken from us by some foreign Power than that we shall lose it by our own ineptitude for its government through the application of measures and methods that are not adapted to it.

Lord GEORGE HAMILTON had no difficulty in carrying conviction to the minds of all reasonable men that the facts had been grossly misrepresented and exaggerated. He read in the House of Commons the full reply he had received from the Government of Bombay to the allegations that had been made, and

we need not trouble our readers with it. But we ask, Is it conceivable that, in carrying out absolutely necessary sanitary measures among a people altogether ignorant of all sanitary science, the authorities should have acted in the way they are accused of having done? Seeing that a number of female medical practitioners, nurses, native gentlemen, and others were present; that the work was carried out under the supervision of the Governor and General Officer commanding, the Surgeon-General, and numerous medical and other officers; and that the troops had been expressly cautioned to act with every consideration, it is incredible that preventive measures were carried out with an absolute disregard for decency and for the caste and religious feelings of the natives. The soldiers forming the search parties bravely undertook a dangerous and most disagreeable duty, and discharged it, we make no doubt, with all proper care and delicacy; all independent testimony is to that effect, and they could not, indeed, have done otherwise under the circumstances in which they were placed.

THE Lumleian Lectures on Some Problems in Connexion with Aphasia and other Speech Defects, recently delivered before the Royal College of Physicians of London by Dr. CHARLTON BASTIAN and published in our columns,[1] are worthy of the most careful attention on the part of everyone who is interested in the more abstruse problems of nervous disease or in the physical aspects of psychological processes. Dr. BASTIAN is to be congratulated upon the graphic manner in which he has re-enunciated the views on this subject which are so closely associated with his name and upon the striking array of evidence in favour of his views which he has marshalled before his readers. Those views as to the nature of the functions of the so-called "motor areas" of the cortex are well known. According to Dr. BASTIAN these are to be regarded as not really motor but as "sensory centres of kinæsthetic type by means of which movements are guided," the true motor centres being situated in the medulla oblongata and the spinal cord. In a similar way he believes that there are two centres, also of kinæsthetic type, one related to articulatory processes, a glosso-kinæsthetic centre, and the other in relation to the movements connected with writing, a cheiro-kinæsthetic centre. Besides these sensory centres there are also an auditory word centre and a visual word centre, devoted to the reception and consequently to the revival in thought of impressions of words. The existence of those is generally recognised, although the position in the cortex which they respectively occupy is still a matter of at least some uncertainty. But with reference to the two kinæsthetic centres already alluded to, Dr. BASTIAN thinks there is less doubt, and he himself believes that the part of the cortex so long and closely associated with the name of BROCA—the posterior part or foot of the third frontal and the inferior part of the ascending frontal convolutions—is the part alluded to as the glosso-kinæsthetic centre, while the cheiro-kinæsthetic centre is by no means so definite, although it is probably to be looked for in the vicinity of the posterior part of the second frontal gyrus. Besides these four centres—the auditory and visual word centres and the glosso- and cheiro-kinæsthetic centres—there must also be supposed to be fibres connecting these, and accordingly lesions relating to speech defects are to be looked for in four different situations—in the word centres themselves, in the commissures connecting those, in the fibres connecting the two kinæsthetic centres with their related motor centres, and in the motor centres themselves. Such is the strong and apparently sufficient foundation upon which the lecturer has constructed a system capable, he believes, of explaining cases of defect of speech.

One very much disputed question amongst writers and thinkers on disorders of speech is the question whether conception or ideation takes place in a centre altogether apart from that related to perception. The view that such was the case was first enunciated by Sir W. H. BROADBENT, who distinguished in the process supposed by Dr. BASTIAN to be carried on in the perceptive centres already alluded to two stages—a primary one, in which the external cause of a given set of sensations is recognised in its simple form, colour, hardness, &c., and another stage in which there is a higher degree of elaboration and a conception or idea of an object as a whole is obtained. This centre for concept was also called the "naming centre," and a related higher centre was postulated—a "propositionising centre"— in which words other than names were supposed to be registered, and in which sentences were supposed to be formulated preparatory to their utterance through the instrumentality of Broca's convolution. This view is, of course, entirely different from Dr. BASTIAN'S, according to whom an impression of an object on reaching the cerebral hemispheres, although it strikes first on the related perception centre, immediately radiates so as to impinge upon functionally related structures, all this taking place so rapidly that the several excitations are practically simultaneous, and so the combined effects are fused into one single perceptive act. Thus, Dr. BASTIAN and those who agree with him regard the work which Sir W. BROADBENT and his supporters suppose to be done in the "naming" centre as effected by the simultaneous activity of the different perceptive centres and of certain annexes. The lecturer further fails to find any clinical phenomena rendering the existence of such a centre necessary.

A certain degree of reconcilement between these conflicting views seems possible in Dr. BASTIAN'S association with his perceptive centres of "certain annexes." FLECHSIG has directed attention to certain areas in the cortex which differ from sensory areas, and he assumes that these subserve the higher mental functions. He terms them "association areas," and, as Dr. BASTIAN points out, they are really the areas which long ago were indicated by Sir W. BROADBENT as the probable seat of the more purely intellectual operations, and presumably, therefore, the areas in which was to be placed his propositionising centre. All recent knowledge of cerebral functions has tended to show that anything like hard-and-fast lines circumscribing any particular centre are at least not the rule, and even granting that combined sensory areas together with the annexes are accustomed to be thrown into functional activity more or less simultaneously, and that the processes of perception and conception and the

[1] THE LANCET, April 3rd, 10th, and 24th, and May 1st, 1897.

revival of linguistic symbols are inseparable in every relation, yet it may be thought by some that it conduces to clearness to associate this higher function with something to which the name "centre" is applied for convenience only.

Having thus devoted the first lecture to a full setting out of the physiological first principles in reference to speech defects, Dr. BASTIAN proceeds to discuss the various defects that are met with in the speech functions, dealing first with the structural defects met with in the glosso- and cheiro-kinæsthetic centres. He brings forward much evidence to show that, contrary to the views of DÉJERINE and others, agraphia is not produced by any isolated lesion of Broca's centre, a contention incidentally demonstrating the necessity for the recognition of a cheiro-kinæsthetic centre The various defects met with in the auditory and visual centres are next dealt with, and much fresh light is thrown upon the problems discussed by the numerous cases which are quoted in this connexion. The nomenclature at present in use is also criticised in several particulars.

It is a curious coincidence that almost simultaneously with the publication of these lectures there should have been appearing in our columns, from the pen of Dr. BYROM BRAMWELL, detailed accounts of one of the most wonderful series of cases of aphasia ever published. These cases cannot fail to have impressed all who read them on account of the extreme care with which they had been observed clinically, and also on account of the importance given to them by the careful record of the pathological condition which was found in those examined. It is also noteworthy that one of Dr. BRAMWELL'S professed objects in publishing those cases was to support the view that the right hemisphere must be regarded as taking an important part in relation to the mechanism of speech, a view also strongly insisted upon in Dr. BASTIAN'S lectures. It is further of interest that in at least two of his cases Dr. BRAMWELL finds reason for arriving independently at the view which Dr. BASTIAN has so clearly enunciated—that complete destruction of Broca's convolution does not necessarily produce agraphia.

In studying Dr. BASTIAN'S lectures and Dr. BRAMWELL'S clinical cases, with the conclusions he deduces from them, the reader cannot but be struck with the admirable lucidity which characterises both contributions. The lectures are necessarily to some extent controversial; but the facts are presented with the utmost fairness, and the views enunciated in them will, we believe, long remain as an authoritative exposition of Dr. BASTIAN'S theories. Dr. BRAMWELL'S series of accurately observed and carefully recorded clinical and pathological facts forms, we are glad to know, only a preliminary contribution to the fuller and more systematic discussion of a subject on which his views will be awaited with interest and received with consideration.

THE PRINCE OF WALES spoke with much sense and moderation of his Hospital Fund for London on the occasion of the dinner of the Master and Elder Brethren of the Trinity House on Saturday last. He has the faculty of condensing into a few words the gist of a question. His words on this subject were, indeed, so few and so well ordered that we may with advantage bring them to the memory of our readers:—

"In my efforts for the hospitals I trust that in time I may be successful. The work does not progress as fast as we could wish; but we must have patience. I hope that the hospitals will be set on a firm basis, and that the public will come to feel that the money spent on them is not spent in vain."

We recognise in these words proof that the PRINCE realises that he has undertaken no easy task and that the public will have to be convinced that the money given to him for this purpose will be well expended. And in this sober judgment of the case we see the best security of the ultimate success of his labours. His Royal Highness will have at any rate this consolation—that if he does not succeed nobody else is likely to do so, and that even if he does not get the full sum which he proposed to raise he will have conferred a very great favour on institutions and earned the gratitude of all who are responsible for their maintenance. The Jubilee year is little more than half gone, and yet large sums still continue to flow into the Fund in a way to justify that fine note of faith in his speech that eventually he would succeed. He began this movement with a deep desire to engage large numbers in the support of hospitals and on the theory that small sums from them would solve the problem. He estimated that the deficiency in the ordinary income of hospitals as compared with their ordinary expenditure — amounting to £70,000—would be met by exciting the interest of the many who do not give and yet who could afford to give at least 10*s.* a year to hospitals. He explained that there were three reasons why this large number of persons—representing at least 225,000 metropolitan households—did not subscribe: firstly, the difficulty of choosing among so many deserving objects; secondly, the lack of any definite opportunity for giving annual subscriptions to the cause as a whole; and thirdly, the feeling that small sums were scarcely worth contributing. The PRINCE excluded indifference or want of sympathy as possible explanations why so many who could afford to subscribe did not do so, and we have no desire to be less charitable in our own theory. We shall look anxiously to the remaining weeks of this eventful year for the confirmation of the PRINCE'S theory that there are 225,000 households which only need the suggestion and the opportunity to take their hitherto neglected share in maintaining institutions which alleviate pain and cure disease among classes that are too poor to provide the necessary skill for themselves. There still remain the rich in this metropolis, those who can find an opportunity of contributing to this cause whenever they please. It is not only those of comparatively small means who have failed to subscribe to hospitals, but the rich. Many rich men either do not subscribe at all or do so in a half-hearted way that does more harm than good. The only doubt we have about the original letter of His Royal Highness is the prominence given in it to the subscription of small sums "from a shilling per annum and upwards." The object no doubt was to encourage the humblest to do what they could. But, after all, the maintenance of our hospitals has always chiefly depended on the rich or the comparatively rich, who derive immense indirect benefits from hospitals as places where medical and surgical skill is perfected. We live in an age

when an ever-increasing number of men accumulate wealth beyond their need or that of their families. Splendid acts of generosity testify that the possession of such wealth is often consistent with sympathy for others who are lame and ill and in much need of help. The endowment of hospitals is the most direct way of showing such sympathy, and we cannot doubt that before this memorable year is ended the patience and labours of the PRINCE OF WALES and his colleagues will be rewarded by rich men casting into the treasury sums that will raise this capital Fund to £500,000 at least. The PRINCE'S recent speech and the composition of the Committee lead us to hope that the money so raised will be well spent. We are sure there is much in this. The PRINCE has ably refuted the miserable attempt to associate hospitals with acts of cruelty to the lower animals, which, in truth, largely benefit by every advance in medical science. He will do equal service in using his endeavours to convince the public that the money they give to him for this Fund will be spent on those who need it, and that any proved abuses of hospital charity will be regarded as demerits in the hospitals which permit them.

Annotations.

"Ne quid nimis."

THE HEALTH OF THE QUEEN

WE are glad to be able to state, on excellent authority, that certain rumours to which publicity was given last week with reference to Her Majesty's eyesight were grossly exaggerated. It is a fact that for some years her eyesight has been affected owing to changes incidental to her advanced age, but, although in the nature of things this condition may be slowly progressive, there is no truth in the statement that it is rapidly becoming worse. The deterioration of her vision naturally causes the Queen some inconvenience, but not to the extent of interfering with her ordinary course of life or of preventing her from discharging her multifarious and onerous duties. Her Majesty's health is, for a lady of her age, perfectly satisfactory. Indeed, there are probably but few ladies contemporary with her who could have borne so well the fatigue and strain of the recent Jubilee celebrations.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE total sum collected for the Metropolitan Hospital Sunday Fund now amounts to £31,000, including a donation of £500 from Sir Savile Crossley, the most regular and generous supporter of the Fund. This sum does not compare favourably with the amount collected last year at the corresponding date, but it is yet too early to make real comparisons, as many of the collections have not been made. The middle Sunday in June is usually chosen for the collection of the Fund, as being most convenient for the larger number of churches and chapels in the metropolis, but unfortunately this year the date clashed with the Sunday set apart for the special service in commemoration of Her Majesty's Diamond Jubilee. Special efforts, too, are being made this year to increase the subscriptions for the Clergy Sustentation Fund, and the day appointed for the collection of this latter fund also unfortunately fell upon the same date. Many of the churches have not yet had their Hospital Sunday Fund collection, the whole of the deanery of Fulham, for example, holding it as a matter of Church discipline to postpone their collection till later in the year. Among the legacies which have recently been bequeathed to the Fund is the munificent bequest of the late Mr. William Vokins, of Hove. In his will he bequeaths the sum of £15,000 upon trust, to be transferred at the death of his wife to the president and treasurer for the time being of the Metropolitan Hospital Sunday Fund, out of any £2 15*s.* per cent. Consolidated Stock standing in his name at the time of his death.

EXPOSING A SCARLET FEVER PATIENT.

A MAN named Thomas and his wife were on June 28th summoned at the Ystrad police-court for exposing their daughter while suffering from scarlet fever. The case was notified by the medical attendant, Mr. Evan Jones, of Pentre, on May 22nd, and on June 15th the sanitary inspector found the child out in the street. Mr. Evan Jones is reported as having said in evidence that by June 15th the infection was over. We suppose that the rash was out when Mr. Jones notified the case, so he must have considered that the child became free from infection in the space of twenty-four or at the most twenty-five days, a period, in our opinion, a great deal too short. No scarlet fever patient should be considered free from infection until the expiration of at least forty-two days from the appearance of the rash, and the medical officer of health, Mr. Herbert Jones, urged this point in court. The stipendiary, however, is reported as saying: "Dr. Jones has given us an instance of a case of infection having ceased in four weeks, so there was no danger." After this the case was dismissed. We see that according to Mr. Herbert Jones's last report, dated June 16th, 1897, the mortality for the fourteen years, 1882–1895, per 1,000,000 from scarlet fever was for England and Wales 267, but for the district of Ystradyfodwg 608, and if from three to four weeks is to be generally considered a sufficient period for isolation we are not surprised thereat.

THE ILL-HEALTH OF MOLIÈRE AND ITS CAUSE.

THE mysterious Boulanger de Chalussay, author of the libellous "Élomire Hypochondre, ou les Médecins Vengés"—who is described by Dr. A. M. Brown in his recently published work[1] as "a personage little known, but possessing no mean talent as a writer, and dangerous as an assailant on his own account or as a mercenary in a literary plot, where a rival's character and reputation were at stake"—endeavoured to brand the great French dramatist as a prating hypochondriac; psychologically, morally, and physically repulsive; a corrupter of morals and a buffoon, who regarded his medical advisers as assassins aggravating his malady by their vengeful treatment when as a patient they had him in their power; but after an exhaustive study of his theme Dr. Brown has come to the conclusion that in reality Molière was a victim of chronic phthisis. The passage in which this opinion is expressed runs as follows:[2] "The nature of the malady, which for years he had been nursing like a wolf within his breast, is far too strongly marked to leave a doubt upon our minds. The condition in which some profess to see thoracic aneurysm or cardiac disease, is much more easily explained; in his case these terms have more attraction than reality to recommend them. Rare diseases are not reserved for rarest men—here nature is impartial. Molière was an ordinary *poitrinaire*, the victim of that malady which the statistics of mortality have vulgarised. In every allusion, personal or narrated, respecting his health and sufferings we can trace a faithful record of a chronic ulceration of the lungs, continually masked by ailments peculiar to his high-wrought mind and constitution

[1] Molière and His Medical Associations. London: The Cotton Press, 1897. [2] Ibid., p. 200.

morbidly affected, destructive processes internally at work, and easily misread. To his worshippers it is the genius struggling with mental affliction, rather than the mortal suffering from bodily disease, that shows throughout the melancholy history of his illness. The characteristic cough, emaciation, constitutional debility, and occasional pulmonary hæmorrhage, present the veritable portraiture of those organic ravages, indefinitely prolonged, which receive the name of phthisis. It is rarely that we see that amount of constitutional resistance which the great comedian's case exhibits; the all unequal contest between life and death generally terminates much sooner, but, terminate when it may, the victory is never doubtful—the patient must finally succumb." Dr. Brown is no doubt correct in his views regarding the disease from which Molière suffered, and unquestionably he has thrown considerable light upon the inner life of the poet and the motives that actuated him in his raids against the medical profession. Whatever the cause may have been that prompted Chalussay to pen his ignoble satire, it is satisfactory to find that the Faculty did not consider itself honoured by his service, but, on the contrary, cordially disapproved of the libeller's caricature, which was universally thought to display animus as virulent as it was merciless.

MEDICAL SERVICE IN BRITISH CENTRAL AFRICA.

IT is generally allowed to be no empty boast that the Briton makes the best coloniser, but even if this is so it is no reason for wasting our material and it would seem that in British Central Africa at least we do not do as much as we might to avoid a sacrifice of valuable lives. Tropical diseases run so rapid a course that prompt treatment is needed if any good is to be done, and this means the presence of a medical man. The protectorate in question is about the size of England and Wales, has a population of 850 000, of whom some 600 are Europeans or subjects of British India. The number of medical men is only four, while in the German sphere, which is smaller than our own, there are no less than eighteen. During the year 1897 seven officials and sundry missionaries have died from hæmaturic fever and there have been seven or eight fatal cases of ordinary malarial fever. Of course, it cannot be said that these lives would have been saved had the patients been promptly attended to, but it would, at any rate, have given them a better chance. We do not know how much of the blame to apportion to the Imperial Government and how much to the British South Africa Company, who are the two governing bodies of the district, but in our opinion the supply of medical men should be at least trebled. It would seem that the deadly Crimean traditions of getting glory cheaply, or apparently so, for it is very dear in the long run, still hold good in many a department. We are ready enough to spend money on fads; let us give a little of it to life-saving.

WOOL-SORTERS' DISEASE AND ITS PREVENTION.

AN inquest recently held at Queensbury upon a man who died from wool-sorters' disease, and the proposed new regulations for the carrying on of that trade, have been the text of a correspondence and a leading article in the Bradford press. Shortly, the matter seems to stand as follows. The wool is sorted upon wire "hurdles," and underneath these is a tube, down which a current of air is driven by means of a fan. The minimum amount of air passing should be, according to the Government suggestion, 25 cubic feet per minute, while the operatives themselves wish for 75 cubic feet. It is also allowed that many firms have fans which give a great deal more than the Government minimum. But, as Dr. J. H. Bell pointed out in the *Bradford Observer* of July 1st, even supposing the dust and germs are removed from the neighbourhood of the sorter a certain amount is distributed broadcast, and the rest which falls into the receptacle has to be removed, a process which may be fatal to him who has to remove it. Dr. Bell suggests that all wool, hair, and skins should be disinfected at the port of entry. In our issue of May 22nd, 1897, in commenting upon a death from anthrax at Bradford, we said that the right thing to do was to disinfect the suspected goods before opening them. It is surely worth while to make some experiments upon this question. Anthrax is so deadly a disease, the vitality of the bacillus is so lasting under ordinary circumstances, and the loss to agriculturalists from its prevalence is so considerable, that it would seem to be the height of folly to leave any means untried which offer a way of escape, for even if the experiment failed the loss of a few bales of wool and of sundry hides would not ruin the Treasury when it was called upon to pay for them.

THE TREATMENT OF PERFORATION IN TYPHOID FEVER BY LAPAROTOMY.

AN important communication on this subject has recently been made to the Johns Hopkins Medical Society[1] by Dr. Finney. Laparotomy has now been performed in 47 cases with 13 recoveries. The best time for operating is as soon as the patient has recovered from the shock attending the perforation. This is usually in a few hours. Dr. Finney first examines the ileum and sutures any suspicious-looking patches. He removes the appendix if at all abnormal. Excision of the edges of the perforation is unnecessary. Should the intestine be in such a condition as to make suture impossible the loop may be pulled out and left until the patient has recovered from the fever. The peritoneum should be thoroughly cleansed by wiping. The small intestines may be irrigated, having been pulled outside the abdomen, but the abdominal cavity should not be irrigated if the inflammation does not involve the whole peritoneum for fear of spreading the infection. The worst or sutured coil is placed next the abdominal wound and packed with strips of gauze to ensure good drainage, for which a small opening is left. The necropsies show that healing was always taking place. Death usually resulted from septic absorption, but the records show some other complications—intestinal obstruction, a second perforation, or defective drainage of an abscess. The diagnosis of perforation is often a matter of difficulty; in 8 of the cases it was wrong. Dr. Finney places most reliance upon severe continued abdominal pain with nausea and vomiting and on a new sign—marked increase in the number of leucocytes. During typhoid fever there is no leucocytosis, but it occurs immediately after a perforation. Thus in 3 cases the numbers before and after were 8300 and 24,000, 6500 and 10,600, 3000 and 16,400. Another recent publication, by Dr. Francis R. Gairdner, in which the subject is treated from a different point of view, is also valuable.[2] He analyses the reports of 47 fatal cases of typhoid peritonitis which occurred in the Belvidere Fever Hospital, and compares them with published cases in which operation has been successful. By this ingenious method he obtains evidence of the success likely to attend laparotomy in general. He divides the cases into four classes. The first, the very favourable, contains 9 cases (19·1 per cent.). Here the perforation occurred in a quiescent stage of the disease or in the course of a mild attack, and the necropsy showed very slight affection of the gut. In many the perforated ulcer was the only considerable one present, and in all it was surrounded by sound gut. The second class, cases not quite so favourable, but none less favourable than successful cases already published, contains 14 cases (29·8 per cent.). The third, unfavourable, consists of 9 cases (19·1

[1] Bulletin, May, 1897.
[2] Glasgow Medical Journal, February, 1897.

per cent.). Many of these, however, would be submitted to operation if van Hook's dictum, "the only contra-indication is a moribund condition of the patient," were acted on. The fourth, altogether unfavourable cases, contains 9 (19·1 per cent.). There remain 6 cases in which peritonitis was not due to intestinal perforation. As these cannot usually be distinguished during life from cases of perforation they would, if operation become the practice, be submitted to it. But this would probably be beneficial in many. In 23, or nearly half the cases, the disease was in full activity at the onset of the peritonitis, while in the remaining 24 convalescence was nearly or quite reached. The duration of life after the onset of the peritonitis was in 3 cases less than 24 hours—viz., 8 12, and 18; and in 7 less than 36 hours. Thus all but 10 lived for at least 36 hours. Only 10 lived longer than 43 hours, and only 3 longer than 3 days—viz., 3½, 5, and 18. In the last two the peritonitis was not due to perforation. The analysis of the symptoms is valuable, showing the deviations which may occur from the typical condition. The mode of onset was usually sudden, but in 12 it was gradual. Of 39 cases the temperature was considerably raised after the onset of the peritonitis, in 22 either immediately or early, and in 8 it was lowered. The pulse was invariably quickened, though sometimes in the early stages not very much so. Pain was an initial symptom in 26 of 42 cases; it was absent throughout or very slight in about 8. Vomiting and hiccough were prominent in 14, but occurred at the onset in only 2. Meteorism occurred in about half the cases. As perforation is almost invariably fatal under medical treatment we consider that the success so far attained, though moderate (it will probably be greater in the future), should prevent the question of laparotomy being regarded any longer as *sub judice*. Every case should be given the chance afforded by operation where the general condition does not absolutely contra-indicate it.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE introduction of voting papers which can be sent by post for the election of members of the Council has completely changed the aspect of election day at the Royal College of Surgeons of England. Time was when on this day Fellows gathered from all parts of the kingdom, and nearly every Fellow in London recorded his vote. It formed a very pleasant occasion for renewing old friendships, for Fellows met there who did not see each other at any other time during the year; but though at the conclusion of the ballot the library was almost filled with Fellows anxious to hear the result of the poll, yet the total number of voters was not large, as so many were unable to be present. Nine years ago voting papers were introduced, and very soon the effect on the personal attendance of Fellows was seen; the numbers of those who came to the College to vote steadily diminished, but voting papers had to be asked for, and this restricted their use. Three years ago the plan of sending voting papers to all Fellows was commenced, and immediately the numbers of non-personal votes almost doubled, surpassing slightly even the numbers of the present year, when 607 voting papers were received by post. As the votes by proxy increased the personal votes fell off; 1894 was the last occasion when they exceeded 100, and this year they amounted only to 46. The chief effect of voting by post has been to increase the influence of provincial Fellows at the elections. The result is good, and there is no chance of a return to the ancient method of voting; it is, indeed, almost a question whether it will not be necessary to abolish personal voting altogether, as every year there is a greater difficulty in obtaining a quorum. At the election held last week the President had to wait ten minutes before there were six Fellows present, apart from members of the Council, so that he might declare the opening of the election. The results of the recent election may be considered as, on the whole, not unsatisfactory. We are glad to see that Mr. Howse was re-elected. Dr. Ward Cousins was re-elected also, and we may attribute this in part at least, to the very general, and very natural, disinclination which exists to decline to re-appoint retiring members of the Council who are applying for re-election. Mr. Edmund Owen headed the poll with 323 votes, thanks chiefly to the very large number of plumpers, 28 in all, which he received. No other candidate received many plumpers except Sir William Dalby, who had 10. Mr. Rickman Godlee came next to Mr. Owen with 312 votes, Mr. Howse followed with 307, and Mr. Watson Cheyne and Dr. Ward Cousins completed the number of successful candidates with 290, and 259 votes respectively. Mr. Bennett May and Mr. Morgan received each 236 votes, and Mr. Clement Lucas had 225. None of the other three candidates received more than 200 votes. We may express the hope that at the next election Mr. May, Mr. Morgan, and Mr. Lucas will again stand, and that the result of that election will bring them success. All the elected candidates may be regarded as valuable additions to the Council; how they will vote in the interesting questions of College politics time alone can show; but we may venture to hope that none of them will in any way retard, but rather help on, the progress of the College in the performance of the important duties with which it is intrusted.

THE PLAGUE IN BOMBAY.

WE have received a copy of the proceedings of the monthly meeting of the Bombay Medical and Physical Society held in May last, together with some voluminous charts showing the meteorological conditions that prevailed during the late epidemic of bubonic fever in the city and island of Bombay, and the mortality caused by the disease from September to March last, to which we have already adverted. The papers read before the society were upon the Clinical Types of Plague with Urinalysis, by Surgeon-Captain J. G. Hojel; Remarks on the Pathology of Plague, by Surgeon-Captain B. H. F. Leumann; and an Outline of Symptoms of Plague, by Surgeon-Major W. R. Lyons, M.D. The papers are valuable because they embody the observations and results of those who have so recently had a practical experience of the disease, and the charts will form a useful record of the epidemic. The deaths from plague in September, October, and November were relatively few. These increased in December, and went on increasing greatly in January and February, in which month the epidemic was at its maximum, and began to decline in March. We may add that according to the latest telegraphic despatch from the Governor of Bombay the deaths from plague last week in Bombay city were only twelve, and no cases of, or deaths from, plague had occurred in the city of Poona. The mortality in all the affected areas was also steadily decreasing.

PSEUDO-BULBAR PARALYSIS IN CHILDHOOD.

IN a recent issue of the *Deutsche Zeitschrift für Nervenheilkunde* Dr. Brauer, of Heidelberg, has published the case of a girl, aged fourteen years, who had an illness characterised by fever and muscular pains, and after a few days was found to have symmetrical affection of the tongue and lips, with difficulty in articulation and in swallowing and slight paralysis of the right side. There was also afterwards interference with the development of the right arm. On examination about a year after the onset of the illness the skull was found to be normal, there was a symmetrical affection of the orbicularis oris, of the depressors of the lower lip, of the levatores menti, the pterygoids, the tongue, and

the palate. There was, however, no atrophy of these muscles, but the tongue, which was not well developed, was not moved in speaking. There were no fibrillary contractions, no electrical changes in the muscles, and no sensory impairment. The palate was paralysed, the palatal reflex lost, the jaw-jerk increased, the speech almost unintelligible, and the intonation distinctly nasal. The right arm was shorter and generally smaller than the left, there was slight weakness of the peroneal muscles of the right leg, and increased reflexes also on this side. The good condition of the muscles, the absence of fibrillary twitchings, the presence of the reflexes and the absence of electrical changes all speak in favour of there not being any nuclear lesion, and Dr. Brauer regards the condition as resulting from a supra-nuclear lesion, apparently the result of acute encephalitis.

CAMBRIDGE GRADUATES' MEDICAL CLUB.

THE annual meeting and dinner of this club, on Tuesday, July 6th, at Limmer's Hotel, Conduit-street, W., was attended by members and their guests to the number of fifty-nine. Dr. Howship Dickinson was elected to the office of president in the room of the late Sir George Murray Humphry, and occupied the chair at the dinner. After giving the loyal toasts of "The Queen" and "The Prince of Wales," he reviewed the chief events of the year in connexion with the Medical School of Cambridge. The death of Sir G. M. Humphry, the appointment of Mr. Joseph Griffiths as reader in surgery, of Professor A. A. Kanthack to be deputy professor of pathology, and the fact that in the person of Dr. Alexander Hill, Master of Downing, the University of Cambridge is for the first time in history under the rule of a medical vice-chancellor, were all alluded to in graceful terms. "The Guests" was proposed by Dr. Norman Moore in a speech characteristically full of humour and curious knowledge—a speech which brought out responses from Sir Samuel Wilks, Professor R. C. Jebb, Sir Joseph Fayrer, and Sir George Scott Robertson. The health of the chairman was eloquently given by Mr. Herbert Page.

CONGENITAL AND HEREDITARY OPHTHALMOPLEGIA.

IN a recent number of the *Revue Médicale de la Suisse Romande* Dr. Gourzein describes a family in which this peculiarity occurred. The paper is abstracted in the last number of the *Neurologisches Centralblatt*. The peculiarity occurred in the father of the family and in five sons, while the three daughters were unaffected. It was ascertained from the father that his mother had had the same affection and a sister had convergent strabismus. Examination of the father revealed almost complete ptosis, so that in order to see he had to throw the head back. There was complete inability to move the eyeball, but accommodation and the light reflex were present and the discs and fundi were normal. There was rotatory nystagmus, but no other affection of the nervous system. A similar condition was found in the eldest boy, aged twelve years, and in the second, aged nine and a half years, although in the latter there was retained some movement of the external and internal recti. The third child, a boy who died at the age of eight months, suffered in exactly the same way. The remaining two boys, aged respectively four years and eight months, presented exactly the same condition, while the girls were all normal. With the exception of the hereditary tendency no distinct etiological factor could be discovered. There was no specific taint or any form of toxic condition so far as could be ascertained. Dr. Gourzein believes that these cases of congenital ophthalmoplegia differ from the ordinary form due to nuclear degeneration in the fact that the ptosis is much more marked, that nystagmus is present, and that a greater or less degree of amblyopia co-exists, and he regards the condition as a purely muscular affection.

ROYAL COMMISSION ON TUBERCULOSIS.

MEETINGS of this Commission were held at 7, Whitehall-place, on June 30th and July 1st and 2nd, the Right Hon. Sir Herbert Maxwell, M.P., being in the chair. The other Commissioners present were Sir Richard Thorne Thorne, K.C.B., F.R.S., Professor Brown, C.B., Mr. Shirley F. Murphy, Mr. Cooke-Trench, and Mr. John Speir. Evidence was heard from Mr. C. Stephenson, F.R.C.V.S., representing the Royal Agricultural Society, Veterinary Inspector of the city of Newcastle and county of Northumberland, as to the extent of the disease in his district and the necessity for uniformity in any legislation so as to cover every channel by which the disease may be conveyed; from Mr. Samuel Rowlandson and Mr. Christopher Middleton, both representing the Central Chamber of Agriculture, the former also the Royal Agricultural Society; from Mr. Sessions, F.R.C.V.S., and Mr. Hunting, F.R.C.V.S.; from Sir T. D. Gibson-Carmichael, M.P., and Mr. Dobbie, representing the Scottish Chamber of Agriculture, the former of whom gave details as to the results of testing with tuberculin his Castle Craig herd.

RIVER POLLUTION AND WATER-SUPPLY.

THE following state of affairs may possibly account for the discrepancy that frequently exists between private analyses and the published reports of the water companies. Sunbury-on-Thames, with the sylvan surroundings that are still spared by the utilitarian hand of the water companies, is well known as a health resort or summer home to many a jaded City man. In the forty or fifty houses, the gardens of which extend to the river, a numerous colony annually congregates. These gardens are small and are more or less honeycombed by cesspools, there being two or three in each, many only a few feet from the river. These cesspools are apparently unprovided with any overflow, and not only do they receive the contents of the water-closets and sinks, but also the rain-water from a considerable area. When full their liquid contents must soak through the highly polluted gravel soil into the river just above the intakes of the water companies. During the recent heavy rains some of these cesspools have overflowed the surface of the gardens and paved courts, giving rise to an indescribable effluvium. When the river is in flood the condition of the water is too awful to contemplate. In addition to these pollutions certain poor nomads wash their foul linen on Sunday mornings by the river bank in this diluted sewage, so that even apart from overflow fouling pity must be extended to the Londoner who has to drink the water taken from such a source.

ŒSOPHAGOTOMY IN THE INFANT.

THE operation of œsophagotomy is happily so seldom called for that any case in which it has been performed may still prove instructive. One such described by Dr. Lemaistre of Limoges in the *Journal de Clinique et de Thérapeutique Infantile*, June 10th and June 17th, 1897, is peculiar, inasmuch as the patient was the youngest whose age has been recorded—an infant of six months. The foreign body was a leaden brooch 3 centimetres long by 1½ broad, which had been swallowed and had lodged in the gullet just below the cricoid cartilage, where it could be felt with the finger passed down the throat. After it had caused more or less irritation for fourteen days the child was put under chloroform, and the œsophagus, which was found at a depth of 4 centimetres, was opened at its left side opposite the seat of obstruction, the brooch extracted, the wound united with deep sutures—a gauze drain being left

in its lower extremity,—and a dry antiseptic dressing applied. After a fortnight the wound had healed. Dr. Lemaistre notes in connexion with this case the tolerance of foreign bodies shown by the œsophagus as compared with the pharynx, and also its great distensibility during life. He gives as the results of dissection of the dead subject approximate measurements of the œsophagus. According to these the total length of this structure at birth is 12 centimetres, that from the cricoid to the interclavicular notch of the sternum 3½ centimetres. At six months of age 1 centimetre has been added to each of these measurements. He advocates a long primary incision from the cricoid to the sternum for this operation, and following the example of H. Schramm,[1] he prefers not to include the mucous membrane in stitching the wound, but would allow its divided surface to unite naturally, thus ensuring a more rapid closure.

CONTAGIOUS DISEASES IN A POOR-LAW SCHOOL.

IN the current number of the *Practitioner* is a very interesting paper by Dr. S. G. Litteljohn upon the above subject. The school in question is the Central London District, and the space of time covered by the paper extends from Jan. 1st, 1871, to the present time. The ages of the children vary from three to sixteen years, and about 14,000 children passed through Dr. Litteljohn's hands in the period. Amongst these 3274 cases of disease occurred; but this does not mean that that number of children were affected, for one child, of course, often had the same disease twice, or had two or more different fevers. As regards seasonal influence, small-pox and diphtheria were diseases of March, April, and May. Chicken-pox was pretty uniformly distributed throughout the year; scarlet fever was most prevalent in December, January, and February, and measles in February, March, June, August, and November. Whooping-cough was most frequent in December, March, February, and April, while influenza was far more common in January than in any other month. Of the deaths 162 in all were due to small-pox, 1 to influenza, 6 to diphtheria, and 20 to scarlet fever. The one fatal case of small-pox, a boy aged ten years, bore no trace of a vaccine scar. Dr. Litteljohn, naturally enough, interpreted the clause of the Poor-law that it is the duty of the medical officer to "vaccinate all children requirjng vaccination" as including re-vaccination, and acted on this idea for some years, when he discovered his action was illegal; so the school is now less protected than formerly, but there has been no case of small-pox for thirteen years. We have not space enough to deal with the whole of this valuable paper, but we recommend every medical man to read it.

THE STATE OF THE STREETS.

WE are glad to see that of late there have been various growls in the daily press as to the various dangers and objectionable features to be met with in the streets. They are many and various and we can only notice a few of them. The first and most important from a medical point of view is the abominable custom which is allowed to go on quite unchecked of collecting what is euphemistically known as "waste"—i.e., every kind of kitchen refuse which gives out a filthy odour—at a late hour in the morning. A flagrant instance of this came under our notice the other morning in St. James's-square at 10 A.M. Traffic of this kind should be strictly forbidden except between 1 and 7 A.M. At present—and this brings us to another cause of complaint—the traveller in a crowded street like Piccadilly may easily get blocked on an omnibus just behind one of these pest carts and be nearly poisoned. Progress is constantly being checked by the omnibuses in front and so the nuisance is more or less constant. The number of omnibuses will have to be limited, and in any case they should not be allowed to stop anywhere and as many times as those in charge of them like. A third point, which is rather a matter for the vestries, is to see that there is some reason exercised in watering the streets. We constantly see the steep end of Bedford-street sprinkled with water, rendering it so slippery that for a horse to get up with a heavy load is a terrible struggle, and has often to be given up. The Strand in the meantime, which is just as dusty, is seldom watered. No steep street should ever be watered artificially except for the purpose of being washed. The evils of traffic are increasing, and those we have mentioned are inimical to the health and temper of the community. As to street noises, we suppose something will be done some day, but at present the plague of organs and newspaper "runners" is unabated.

ARREST OF HÆMORRHAGE IN HÆMOPHILIA BY THE APPLICATION OF HEALTHY BLOOD.

DR. BIENWALD has employed this very original method in the case of a child, aged two years, the subject of hæmophilia.[1] Having failed to arrest the hæmorrhage from a small wound on the face by the application of perchloride of iron, he obtained some blood by aspiration from a healthy subject and deposited it on the wound. In a few minutes it coagulated, and the hæmorrhage at once ceased. His explanation of the action of the remedy is that it supplies the ferment necessary for thrombosis in the small vessels. Whether this is correct or not is impossible to say in the absence of definite knowledge of the pathology of hæmophilia. As affording his explanation some support we may mention the success obtained by Dr. A. E. Wright in his experiments with a solution of fibrin ferment and chloride of calcium as a styptic. Dr. Bienwald's ingenious method certainly deserves a trial.

IN a telegram to Lord George Hamilton the Governor of Bombay has stated that the deaths from plague in Bombay city during the week ending June 25th were 22 out of a total from all causes of 520. In Poona during the same period the total deaths from all causes were 108. One death from plague was reported. The high rate of mortality was due to cholera. In most districts there were either not any, or very few, deaths from plague, with the exception of Cutch, where there were 83 cases and 60 deaths.

MR. W. W. ASTOR has given the munificent annual subscription of £1000 to the Prince of Wales's Hospital Fund, being the largest hitherto received, and another generous person has given an annual subscription of £250. The total receipts up to the present time are, in round numbers, £20,500 in annual subscriptions, £133,150 in donations, and commuted subscriptions to be invested £20,550.

THE treasurer of Guy's Hospital has received a Jubilee gift of £3000 towards the re-endowment fund from a lady who desires to remain anonymous. The interest on this sum will be applied towards the maintenance of beds in Queen Victoria Ward recently re-opened by the Prince of Wales.

AT a meeting of the Council of the Royal College of Veterinary Surgeons, held on the 2nd inst., for the appointment of officers, Professor Pemberthy was unanimously

[1] Wiener Medicinische Wochenschrift, 1895.

[1] La Semaine Médicale, May 5th, 1897.

elected President, and Sir F. Fitzwygram, Messrs. Simpson, Trigger, Wragg, Mason, and McFadyean Vice-Presidents.

AT a special meeting of the Council of University College, Bristol, held on the 29th ult., Mr. Charles Alexander Morton, F.R.C.S. Eng., L.R.C.P. Lond., and Mr. James Swain, M.D. M.S. Lond., F.R.C.S. Eng., were appointed Joint Professors of Surgery in the Faculty of Medicine.

WE are glad to note that Dr. John Thomas Arlidge has been granted a Civil List Pension of £150 per annum "in consideration of his valuable labours in the cause of public health, and especially his investigation into the hygienic results of particular industries and occupations."

H.R.H. THE DUKE OF CAMBRIDGE has accepted the invitation of the Mayor and Corporation of Harrogate to open the new Royal Baths. July 13th is the day provisionally fixed for the ceremony.

SOME NOTES ON THE LATE GRECO-TURKISH WAR.

ONE of the most lamentable things about the recent war between Greece and Turkey was the inadequacy of provision which the Greek nation made for their wounded, and had it not been for the kindheartedness of foreigners Greece must have borne the stigma of treating her wounded in a way which would have almost discredited a nation far lower in the scale of civilisation. It is on record that a man with a broken femur was strapped straddlewise across the back of a mule and thus carried for several miles, and this is by no means an isolated instance of the barbarity of the methods adopted. For men to be conveyed from a cart to an open boat, again to a wagon, and again to a large steamer was a common occurrence on the Arta side, and many injuries proved fatal or were made much worse by the absence of any efficient means of transport. One man with a bullet wound through the thigh who was brought to the English hospital nearly died in consequence of this means of transport. The wound of exit at the back had been so rubbed by the constant friction of the splint that a large sore or sloughing wound the size of the palms of both hands was the result.

The military hospitals, in which there were no Greek women nurses, were for the most part dirty and quite ill-adapted to the needs of war; the soldiers were put to bed in their regimentals, just as they had come from the war; and operations were performed without chloroform, not from lack of the anæsthetic, but from some occult reason only known to the Greek surgeons. The hospitals, however, which were under the patronage of the Princess were everywhere more clean and well looked after. The English hospital in the Piræus was made up of only about twenty-seven beds; the other one had one hundred. These were the two hospitals organised by the *Daily Chronicle* fund. As regards the situation, the hospital at Piræus was an ideal one situated at the corner of a promontory overlooking the open sea, surrounded by picturesque scenery and pure air.

The cases in the English hospitals were selected on account of their severity and to prevent the further suffering which a removal to the hospitals in Athens would intensify, but they do not call for any special notice. The number of wounded, which in Athens alone amounted to about 3000, was unduly large in proportion to the number killed outright in the battlefield, which, it is stated, was comparatively small. No cases of bayonet wounds were seen in the English hospital, but one-fifth of the cases was produced by shells, or by stones, &c., thrown up by the bursting of shells. The large number of gunshot wounds (Martini) presented an extraordinary similar appearance, the round black holes with white charred edge of entrance and exit being so alike that they might have been painted by the same brush. The chief interest of the wounds lay in the direction taken by the bullets: some passed in the neighbourhood of dangerous or important parts without doing any damage; others passed through joints, and rendered the question of resection a debatable one; whilst those striking bone always produced extreme comminution because of the flat-headed shape of the missiles. These weighed about 1 oz. 1 gr. and resembled 1½ in. of uncut cedar pencil. Those perforating the abdomen all proved fatal, the bladder, stomach, as well as many parts of the intestine being perforated. It was noticeable that the larger number of men were wounded in the lower extremities, probably the result of long-distance firing or nearly spent shots.

A glance through the following list of 110 cases from the military hospital at Corfu, where the cases were not selected, shows that nearly 50 per cent. were injuries to the hands, the actual figures showing injuries to the left hand 22, and to the right hand 23, total 45. To comment on the peculiar nature of these injuries would perhaps be uncharitable, but the fact is nevertheless significant.

1. Bullet wound in upper arm. 2. Injury to right thumb. 3. Bullet wound through right shoulder. 4. Left first finger. 5. Left first finger. 6. Bullet wound through right thigh. 7. Bullet wound through right shoulder. 8. Amputation of first finger right hand. 9. Amputation of top of first finger left hand. 10. Bullet wound through left hand. 11. Bullet wound through left hand. 12. Bullet wound of left thumb. 13. Amputation of second finger left hand. 14. Bullet wound through right shoulder. 15. Shell wound of right hand. 16 Grazed wound of left side. 17. Amputation of middle finger left hand. 18. Amputation of top of little finger left hand. 19. Amputation of top of first finger right hand. 20. Bullet wound through right wrist. 21. Amputation of top of first finger right hand. 22. Amputation of whole of first finger right hand. 23. Amputation of half of middle finger right hand. 24. Injury and amputation of top middle finger right hand. 25 Gunshot wound and fracture left forearm. 26. Shell wound and amputation of middle finger left hand. 27. Bullet wound through left hand. 28. Amputation of half first finger right hand. 29. Bullet wound and fracture of right hand. 30. Bullet wound through right shoulder. 31. Shell wound instep right leg. 32. Amputation of half first finger right hand. 33. Amputation of first finger left hand. 34. Amputation of half of first finger right hand. 35. Grazed wound of middle finger right hand. 36. Bullet wound transversely across neck and back. 37. Amputation of half of first finger right hand. 38 Amputation of top of thumb left hand. 39. Bullet wound through lower leg right side. 40. Grazed wound of left thumb. 41. Bullet wound through chest (no spitting of blood). 42 Bullet wound right arm to elbow. 43. Bullet through palm of left hand. 44 Grazed wound of right side of head. 45. Amputation of top of finger left hand. 46 Amputation of top of little finger right hand. 47. Amputation of half of index finger left hand. 48. Wound of top of left thumb. 49 Amputation of half of index finger left hand. 50. Amputation of top index finger right hand. 51. Bullet wound through left shoulder. 52. Bullet wound through right upper arm. 53. Bullet wound through left hand. 54. Grazed wound of right side of chest. 55. Bullet wound through left palm of hand. 56 Bullet wound through left foot; amputation of toe. 57. Grazed shell wound of right foot. 58 Grazed bullet wound of left forearm. 59. Amputation of top of little finger right side. 60. Bullet wound between fingers left hand. 61. Contused wound of shell of face right side. 62. Contused wound of shell on left foot. 63. Amputation of first finger left hand. 64 Bullet wound through left upper arm. 65. Grazed wound between thumb and first finger left hand. 66. Amputation of finger right hand. 67. Grazed wound first finger right hand. 68. Amputation of top of first finger of right hand. 69. Bullet through the right foot. 70 Bullet wound through left thigh. 71. Bullet wound across and through shoulders and back. 72. Amputation top of first finger right hand. 73. Amputation top of first finger right hand. 74. Bullet wound through right hand. 75. Bullet wound through right forearm. 76. Bullet wound through left ham. 77. Grazed wound third finger right hand. 78 Compound comminuted fracture of left patella. 79. Bullet wound through back of neck. 80. Amputation top of little finger left hand. 81. Bullet wound through left upper thigh. 82. Bullet wound through left shoulder blade. 83. Bullet wound through left upper arm. 84. Bullet wound graze right chest (no spitting of blood). 85. Bullet wound through left forearm. 86 Bullet wound through upper left forearm. 87. Bullet wound of face (a very interesting case). 88. Bullet wound of left toes. 89. Grazed bullet

wound of back of head. 90. Grazed wound between fingers left hand. 91. Bullet wound through left shoulder. 92. Bullet wound across back. 93 Amputation of top of first finger right hand. 94. Bullet in left thigh; no fracture; removed. 95. Penetrating bullet wound left foot. 96. Penetrating bullet wound across right side of face and eye. 97. Bullet wound of left buttock. 98. Bullet wound of right calf. 99. Bullet wound across abdomen; flesh wound. 100. Grazed wound across top of head. 101. Bullet wound across right knee-joint (officer). 102 Meningitis, after bullet wound across back of head. 103. Knocked down, and bruising of left side. 104. Incised wound of left foot. 105. Contused wounds of both calves. 106. Swollen and burst feet. 107 Fell from mountain, graze of head, and spat blood. 108 Amputation top of first and second finger right hand. 109. Penetrating bullet wound left upper thigh. 110. Bullet wound through left foot.

It is only right to state that the success of the arrangement of the larger English hospital was due to the experienced aid of Mr. S. Osborn, F.R.C.S., chief surgeon to the St. John Ambulance Association.

STATISTICS OF CHOLERA.

OUR Special Correspondent in Egypt sends us the following figures showing how cholera was distributed throughout the various districts of Egypt during the epidemic which lasted from October, 1895, to November, 1896:—

Town or province.	Number of villages attacked.	First case.	Last case.	Total cases.	Total deaths.
Cairo	—	Dec. 7th	Oct. 21st	1519	1349
Alexandria	—	Dec 28th	Nov. 3rd	1072	914
Port Said	—	July 14th	Sept. 14th	23	20
Suez	—	May 3rd	Oct. 11th	23	15
Ismailia	—	June 12th	Aug. 31st	14	14
Damietta	13	Oct. 11th	Sept. 16th	528	467
Gharbieh	143	Dec. 1st	Oct. 20th	4425	3503
Dakahlieh	52	Oct. 13th	Sept. 29th	1359	1127
Charkieh	96	Oct. 26th	Sept. 25th	1446	1137
Menoufieh	35	June 3rd	Oct. 23rd	800	662
Béhéra	73	May 12th	Oct. 29th	982	828
Kalioubieh	28	June 5th	Oct. 11th	528	434
Ghizeh	23	Jan. 8th	Oct. 14th	616	533
Beni Souef	21	May 16th	Sept. 31st	372	285
Fayoum	58	June 9th	Aug. 24th	2183	1986
Minieh	35	May 31st	Oct. 5th	575	483
Assiout	32	April 16th	Oct. 9th	957	792
Guergueh	60	June 14th	Oct. 10th	2242	1916
Keneh	27	June 27th	Sept. 30th	927	804
Frontier	—	June 12th	Sept. 11th	1103	836

THE METROPOLITAN WATER SUPPLY.

The Royal Commission.

A MEETING of the Royal Commission was held at Trafalgar-buildings, Charing-cross, on Tuesday last, Lord Llandaff presiding. Matters relating to procedure were discussed, and the commissioners have had under consideration the question of the appearance of counsel before them, a proceeding to which they are willing to consent within limitations.

The County Council and the Royal Commission.

The Water Committee of the London County Council have had before them a communication from the Royal Commission stating that the commissioners will be prepared to receive evidence from the Council upon the points referred to them for consideration. The Water Committee are now considering the evidence which is to be presented by witnesses on behalf of the Council, and have prepared a series of resolutions which, they believe, will represent the opinion of the large majority of the Council, and which they hope that the Council will pass at the next meeting.

These resolutions are to the effect that (1) the water-supply of the metropolis should not continue in the hands of private companies; (2) that the undertakings of the metropolitan water companies should forthwith be purchased at a fair and reasonable valuation; (3) that the management of the water-supply should be effected either (*a*) by the London County Council supplying its own area directly and outside authorities in bulk at a fixed price; or (*b*) by the London County Council supplying its own area only, and the outside authorities supplying their areas; or (*c*) by a new body supplying directly the whole area both within and without the county; and (*d*) that, in any case, it is desirable that the London County Council should, in the first instance, be the purchasing authority on behalf of the population of the whole area concerned.

A further resolution suggests that if the undertakings of the water companies are not acquired, it is essential that effective powers of control should be given to the London County Council, and that the legal position of the companies should be re-considered.

"The Water Famine in South London."

The area affected by the recent break-down in the water-supply in the Lambeth Company's district was certainly a large one. The break-down, it will be remembered, was said to be due to a difficulty with the filter beds at Ditton. The engineer of the company wrote to one of the customers who complained of the failure of the company to supply him with water, and in his letter he mentioned that the area affected by the break-down was a large one, and gave that as one of the reasons why every customer could not be informed that the water-supply would for a time be deficient. As far as we have seen, Mr. Andros, the writer of the original letter of complaint, is the only customer in the Lambeth district who has made a public complaint on the matter, but many letters on the subject were received by the Penge Vestry. The Lewisham Board of Works in a debate upon the subject did not mince matters; but the board had before them evidence to show that the sudden stoppage of water had placed certain workmen in grave peril. On the motion of the chairman of the board it was agreed that a very strong letter should be written to the company especially complaining that the company did not give notice of the failure of the supply. The dearth of water lasted three or four days, and it would have been easy for the company to have given notice to the public on the first day. Then the public could have economised what water they had and have taken precautions against accident.

East London Waterworks.

We understand that the East London Waterworks Company are now supplying water from their new reservoirs, the East and West Warwick. We lately gave a full description and plan of these reservoirs in THE LANCET. The water from them passes through a meter house which has been recently erected, and is fitted up with a Venturi meter capable of registering an amount up to 60,000,000 gallons a day.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF FELLOWS.

THE half-yearly meeting of Fellows of the College was held on July 1st, immediately after the election to the Council, the result of which was published in our issue of last week, *vide* p. 67; the President, Sir WILLIAM MAC CORMAC, Bart., was in the chair.

Forty-eight Fellows, including fourteen members of the Council, were present.

The PRESIDENT reported that the Council had received a letter from Lord Lister in which he requested that his

warmest thanks might be expressed to the Fellows for their kind congratulations.

Mr. R. B. ANDERSON moved:—

"That, as asked in a memorial dated May, 1897, of Fellows and Members practising in Plymouth, Devonport, and Stonehouse and the neighbourhood, and in reference to resolutions of previous meetings of Fellows and Members, the Council be requested to afford the College some explanation as to the rights referred to in Section XV. of the College By-laws; and particularly why Fellows and Members are in error in regarding the violation of the right to practise their profession as a disturbance in the exercise of a right acquired by them as Members of the College, and the Council's undertaking to protect and defend Fellows and Members so disturbed as a binding obligation."

He said that the Council had been requested by the memorialists to subscribe to the fund for obtaining a rescinding of the judgments which had been given against him, but that they had said that Section XV., which promised to maintain the rights of Fellows and Members when interfered with, did not apply to his case. The Council was then requested to explain what were the rights referred to in the by-law, but they had replied "they did not think it incumbent upon them to give explanations of the conclusions at which they might arrive, but were of opinion that Mr. Anderson's case did not come within the terms of Section XV. of the by-laws." The resolution he was bringing forward was to ask the Council to give some explanation of the rights and privileges which were mentioned in the by-law. It was most important that the Fellows and Members should know what were the rights which the Council would maintain. So far as he could see, the only right to which the by-law could refer was the right to practise surgery; this was acquired by becoming a Fellow or Member of the College. The silence on the part of the Council was very significant, and he urged the meeting to carry this resolution, which formally requested the Council to give the explanation of what rights were referred to in Section XV.

Mr. GEORGE JACKSON seconded the resolution.

The PRESIDENT said that Mr. Anderson's case had been before the Council many times. They all felt the greatest sympathy with him for the way in which he had been treated, but they had come to the conclusion that the College funds could not be employed for such a purpose, and that help for Mr. Anderson must come out of their own pockets. The College was for the promotion of surgery, and the good work it had done in its museum, its library, and its laboratories was acknowledged by all; it would be an entirely new departure to contribute to the maintaining of actions at law, however deserving the Fellow or Member affected might be. He would like to ask Mr. Anderson if it were true that there was no part of the British Empire where he could not practise?

Mr. F. J. GANT said that he had always taken a very warm interest in Mr. Anderson's case, but the College had no right to contribute from its funds to such a purpose; he would move an amendment:—

"That having heard the President's explanation in reference to the action of the Council in Mr. Anderson's case, this meeting, while expressing sympathy with Mr. Anderson, suggests [to the Council] that no further action be taken in this case."

Sir ROBERT CRAVEN seconded the amendment.

Mr. ANDERSON thanked the meeting for the offered sympathy, but urged that sympathy afforded no relief from his persecutions. The explanation of the President did not really touch the question of the meaning of the by-law. As to the question which he had been asked, it was not a fact that he could practise in Tobago in the same way as other Fellows of the College could; the judgments against him were still in force, and until these were rescinded it was practically impossible for him to practise there. About £900 would be required to carry his appeal to the Privy Council.

On being put the amendment was carried by 25 votes to 4, and on being put as a substantive motion, it was carried by 29 to 1.

Mr. ANDERSON then moved his second resolution, which was as follows:—

"That this meeting desires to call the attention of the Council to the published reports of the proceedings of the General Medical Council at the recent session in the matter of a petition of a Fellow and Member praying for the defence by the General Medical Council of his rights guaranteed under the Medical Acts, and to Mr. Bryant's action in the matter; and to inquire whether, in voting against the reception of the petition and its entry on the minutes, and in accepting the advice of the Council's legal adviser without considering it in relation to the merits and prayer of the petition, Mr. Bryant (*a*) correctly construed the views of the Council on the subject, or (*b*) acted satisfactorily as the representative of the Council on the General Medical Council."

Mr. GEORGE JACKSON seconded.

The PRESIDENT said that Mr. Bryant had been asked to represent the College on the General Medical Council; that no course of action had ever been dictated to him, but he was expected to act according to his own judgment, and that no other arrangement would be satisfactory to the College or to Mr. Bryant.

Sir ROBERT CRAVEN suggested that Mr. Anderson should appeal to the profession for the money necessary to carry on his actions.

The resolution was put and lost.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Enteric Fever in the City of Chichester, by Dr. T. BULSTRODE.[1]—This occurrence took place in the months of May to September of last year, and it has interest because it seems most clearly to have been brought about in the main by conditions of pollution of soil apart from the question of the influence of such pollution upon the water-supply. Chichester has long had a bad repute as regards the prevalence of enteric fever. It was inspected by the late Dr. Seaton in 1865 and again by Dr. Airy in 1879, and for some twenty years its "fever" death-rate has been largely in excess of that of the county in which it is situated, and also in excess of that for England and Wales. Among the points which are worked out with much care by Dr. Bulstrode is the fact that the locality invaded—namely, one situated outside the old walls—is the same as that which had been invaded before. Then it is shown that the incidence of the disease could not have been due to imperfections in a new system of sewerage—indeed, only one house inside the walls that was drained became infected; and, lastly, it appears that the public and private water services could not have induced the disease. Thus, of 494 houses inside the walls which receive the public service of water only 3 were invaded; and taking all the well waters it appears that of 76 houses invaded within and outside the city walls the rate of attack on well-water drinkers was 2·9 per cent., and that on town water drinkers was 2·6; in other words, it was practically equal. But the fouling of soil about houses, and this notably in the locality infected, is about as bad as it could be. Everywhere cesspools and cesspits, disused or still in use, abound. Chichester is "riddled with them," and when houses are sewered or have proper closets provided all the reeking filth of the past is merely covered in and left there to foul and infect the soil. The case is one in which the perpetuation of enteric fever seems to have been ensured by reason of maintaining the foul condition of the soil, and in this sense the report, which is well illustrated, has distinct interest for students of epidemiology.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Southampton Port District.—During 1896 the Admiralty selected Southampton as the port of the embarkation and disembarkation of troops, and although, as Mr. Wellesley Harris observes, this step may be held to be good for the port in a commercial aspect, it undoubtedly increases the risks to Southampton of the importation of exotic diseases, a risk which has been very materially increased during the recent trooping season, owing to the presence of bubonic plague at Bombay, whence came a large number of troops. Each troopship carries on an average, Mr. Harris tells us, some 1250 troops, together with a crew of about 170 Lascars. Arrangements have, it appears, been made by which an officer of the Army Medical Department assists Mr. Harris in his duties in connexion with troopships, and the courtesy of the military authorities, as also of the Customs, is a matter of grateful acknowledgement on the part of Mr. Harris. We expect, too, that no inconsiderable share of the success of the arrangement is due to the valuable assistance which Mr. Harris is able to afford and to the tactful manner in which he carries out his arduous duties. The trade of the port of

[1] Eyre and Spottiswoode, East Harding-street, E.C.; John Menzies and Co., Edinburgh and Glasgow; Hodges, Figgis, and Co., Dublin. 1897. Price 6d.

Southampton is rapidly increasing, and the net tonnage of the vessels entering the port during last year amounted to 3,596,945, as against 2,562,549 in 1892; and it is a fortunate matter, having regard to the increased risk which this amount of shipping entails, that the Southampton Port Sanitary Authority have adopted a liberal, far-seeing policy in their arrangements. An interesting instance of the danger of eating raw mussels procured from near the main sewer outfall is recorded by Mr. Harris. Three sailors who had thus eaten were attacked with vomiting and diarrhœa, and two of them subsequently developed what appears to have been enteric fever. A somewhat unique point in connexion with the attacks of gastritis is that the symptoms did not develop until some six days after the consumption of the mussels, while in the majority of cases of a similar nature the onset of the symptoms has been within a few hours of the ingestion of the mussels. Under any circumstances it would be well, it seems to us, if a notice were erected near to the sewer outfall warning persons as to the danger of consuming mussels found in its vicinity.

Worcester Urban District.—The chief feature in the sanitary history of Worcester during 1896 was an epidemic of diphtheria which caused 49 deaths among 317 notified cases. The outbreak is the more interesting inasmuch as there is no record of a previous epidemic in the city, the deaths in any one year from 1873 to 1889 having never exceeded 8 in number, while the total for the whole seventeen years was but 43. Since 1892 the deaths have been somewhat more numerous, but no outbreak has occurred. From the monthly notification returns it seems that diphtheria commenced to be epidemic in May, but it has to be noted that in the first quarter of the year sore-throat was prevalent in the district, and that there occurred in addition 16 cases, with 5 deaths, from diphtheria. Of these 16 cases, 3 only were of school age. In April 3 cases occurred, and 2 of these were children attending an infant school; while in May, out of the 11 cases notified, 8 were of children attending school, and other 2 in families members of which went to school, the remaining case having presumably no relation to school attendance. Throughout the epidemic there were 155 scholars, from 21 schools, who suffered from diphtheria, figures which do not include secondary cases which occurred in the houses primarily invaded by school attending cases. There were but five schools which were invaded by the disease in a marked degree, none of the other schools having contributed more than 10 cases each; and amongst the scholars attending school in the poorest and most unhealthy part of the town there was but one notified case. In all there were 254 houses invaded, and in 58 the first notified case was of a person not attending school. Dr. Mabyn Read thinks that "the aggregation of children in schools is the main factor in the spread of this and other diseases." It is, of course, necessary to be careful in the use of the term "main factor," inasmuch as it is obvious that in certain outbreaks of diphtheria it is by no means easy to demonstrate, or even legitimately to infer, that "school influence" is the "main factor"; and it is perhaps more precise to say that under certain conditions, and when the disease is exhibiting a high degree of infectivity, the aggregation of children at susceptible ages in schools may be, and often is, a very potent, or even the main, factor in disseminating the disease. If this be a correct thesis it is to be expected that, as these opportunities for the favourable operations of infectivity increase, even so will what may be termed the natural variations of the diphtheria in any given locality tend to be influenced. By natural variations we mean here those remarkable ascents and descents of diphtheria prevalence for which we have as yet found no adequate explanation, and it is further necessary to insist that these variations often manifest opposite tendencies in different localities. The history of Birmingham may be taken as a good example. Here prevalence of the disease has been falling since 1873, but in the autumn of 1894 a rise commenced which has reached in 1896 a point hitherto altogether unknown in the district. Dr. Read remarks that his "experience goes to show that it is not the pronounced cases of diphtheria that spread the disease, but those ill-defined sore-throats seldom seen by medical men." This is surely the key, in a sense, to much that has been affirmed and denied in reference to school influence, and all of us who have had experience in outbreaks of diphtheria can recall numerous instances where the first *notified* case was not attending school, but where he or she had been infected by a school-attending brother or sister who was found to have been the subject of mild but unrecognised diphtheria. In a word, notification tells us only of that which is recognised, and not necessarily of that which may have been the origin of the outbreak, and which may still be causing its spread. School closure in the Worcester outbreak appears to have been attended with good results, but it would have been of interest had Dr. Read furnished the daily and even weekly notification returns in connexion with each school area, together with the dates of closure and of re-opening of each school.

Coventry Urban District.—THE LANCET of April 17th, 1897, contained an obituary notice of Dr. Mark Anthony Fenton, the medical officer of health of Coventry, and since that date his annual report for 1896 has reached us. Dr. Fenton was compelled to relinquish his life's work on March 27th, but he had prior to this completed his annual report, and the town clerk has been able to edit it. The year 1896 was for Coventry one of unexampled prosperity for the cycle and allied industries; large numbers of mechanics were attracted from other districts, while the employés from the Coventry watch and ribbon trades came over to the cycle industry, movements which, Dr. Fenton observed, changed the character of the working population and led to a marked diminution in outdoor relief and in the number of inmates in the workhouse. During the year under review the compulsory notification of measles, which has been in force in Coventry for the last five years, was abolished, and it has to be noted that from 1877 until the adoption of compulsory notification a system of voluntary notification was in force for this disease. The following table will be of interest:—

Period of Voluntary Notification.

—	Cases notified.	Deaths.	Death rate per 1000 population living.
Five years ending 1881	774	43	1·0
" " 1886	2872	87	2·0
" " 1891	2556	82	1·6

Period of Compulsory Notification.

—	Cases notified.	Deaths.	Death-rate per 1000 population living.
Five years ending 1896	4020	95	1·7

There were epidemics in 1882, 1884, 1886, 1889, 1891, 1894, and 1896. The measures adopted were the distribution of printed instructions and the prohibition from school attendance of children from invaded houses. The conclusion to be drawn from the experience at Coventry is, Dr. Fenton added, that notification without isolation is not of much practical value, and he thought that the provision of hospital accommodation for a small number of cases so as to isolate the initial centres of infection might do good. The Gloucester outbreak of small-pox proved a temporary benefit to Coventry in the matter of vaccination, and the guardians, who previously had refused to prosecute, rescinded the resolution embodying that determination. The result was that the percentage of children vaccinated rose from 4·5 in 1895 to 41 in 1896. Dr. Fenton was of opinion that if the pseudo-voluntary system suggested by the Vaccination Commissioners becomes law vaccination in Coventry will soon disappear.

Norwich Urban District.—Dr. H. Cooper-Pattin welcomes the formation in Norwich of a "Sanitary Aid Association," which he thinks will do useful work in the direction of stimulating public opinion, and thus in aiding the efforts of the sanitary authority. Clergy of all creeds have joined the association, and its constitution is such as to command respect. The isolation hospital at Norwich seems to be popular, but unfortunately the accommodation is inadequate for the needs of the city, and instead of there being one bed to every 1000 of the population there is but one to every 2250. As a result of this deficiency first cases of scarlet fever occurring in a house were often during last year unable to be removed, and hence other children contracted the disease.

Dr. Cooper-Pattin thinks that damp, foggy weather, particularly when it is associated with low barometric pressure, tends to produce a congested state of the tissues lining the fauces and thus predisposes to attacks of diphtheria. There were 196 cases of enteric fever notified in Norwich last year, and Dr. Cooper-Pattin has gone very thoroughly into the distribution of the cases in regard to the several factors which may have been concerned in their causation. The chief conclusions at which he arrives are these: that enteric fever has been prevalent in Norwich for the last sixteen years, and that the endemicity of the disease is connected in some degree at least with the methods of excrement disposal which obtain in the city; that emanations from sewer gratings, untrapped gullies, &c., exert a predisposing influence on those exposed to them; and that the thousands of fixed and movable "bins" pollute the soil and air in the vicinity of dwellings, and thus afford a favourable nidus for the disease germs. As evidence of soil pollution Dr. Cooper-Pattin calls attention to the high proportion of chlorides and nitrates to be detected in the soil of the city.

Maidstone Urban District.—During last year the water in one of the reservoirs supplying the town became polluted in rather an unusual and interesting fashion. Attention was first called to the fact that the water in question was polluted through the regular analyses which are made of the public water-supply, and an illustration is thus afforded of the value of these analyses. It seems there are two reservoirs, one known as the new and the other as the old reservoir, situated one on either side of the road and of the sewer which passes along it. The new reservoir is at a higher level than the sewer, the old reservoir at a lower level. The springs furnishing water to the reservoirs rise to the west of the new reservoir, and the water thus traverses the road containing the sewer before reaching the old or low-level reservoir. In explaining how the pollution took place Mr. M. A. Adams points out that when the level of the spring water is, as it usually is, at a higher level than the sewer the water tends to pass through any leak in the sewer pipes into the sewer; but, on the other hand, when, as was recently the case, the water is at a lower level than the sewer the reverse process takes place, and the sewage tends under certain circumstances to pass out into the surrounding soil, and subsequently to be carried with the spring water into the lower reservoir. All this, Mr. Adams adds, exactly fits in with the facts and circumstances of the case, and the water from the lower reservoir has not since been used.

Plympton St. Mary Rural District.—Mr. Noy Scott complains of the nuisance caused in his district by the refuse from Plymouth know as "Plymouth dung." This refuse is stated to be stored by the contractor until it becomes offensive, when it is sold to farmers, who spread it on the land for manure. Mr. Noy Scott reports that the refuse causes sickness in people who are brought in contact with it, and he urges that something should be done to abate the nuisance. It seems that the most effectual and probable remedy is the provision of a destructor by the Plymouth Corporation. Proposals for the erection of a joint isolation hospital in connexion with this district have fallen through, but the district council have obtained permission to lease a piece of ground on which a small pox hospital can at any time be erected, and the medical officer of health has been empowered to purchase a temporary hospital if necessary. We trust the building will be in place in time for the isolation of the first case, but it would be surely better if the council followed the advice of their medical officer of health and procured the site and hospital before this case arises.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 7115 births and 3106 deaths were registered during the week ending July 3rd. The annual rate of mortality in these towns, which had been 15·8 and 15·7 per 1000 in the two preceding weeks, further declined last week to 14·7. In London the rate was 13·5 per 1000, while it averaged 15·6 in the thirty-two provincial towns. The lowest death-rates in these towns were 10·3 in Croydon, 11·4 in Halifax, 11·5 in Leeds, and 11·6 in Derby; the highest rates were 20·1 in Liverpool and in Burnley, 21·0 in Salford, 21·9 in Plymouth, and 25·4 in Preston. The 3106 deaths in these towns included 409 which were referred to the principal zymotic diseases, against 355 and 404 in the two preceding weeks; of these, 156 resulted from measles, 82 from diarrhœa, 77 from whooping-cough, 41 from diphtheria, 34 from scarlet fever, and 19 from "fever" (principally enteric). No deaths from any of these diseases were recorded last week in Swansea, in Derby, or in Halifax, while they caused the highest death-rates in Manchester, Salford, Burnley, Preston, and Plymouth. The greatest mortality from measles occurred in Bolton, Newcastle-upon-Tyne, Birmingham, Manchester, Salford, Burnley, and Preston; from scarlet fever in Leicester; from whooping-cough in Norwich, Oldham, and Plymouth; and from diarrhœa in Burnley and Plymouth. The mortality from "fever" showed no marked excess in any of the large towns. The 41 deaths from diphtheria included 32 in London and 2 in Liverpool. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2821, against numbers increasing from 2380 to 2789 on the nine preceding Saturdays; 310 new cases were admitted during the week, against 255, 274, and 267 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 140 and 142 in the two preceding weeks, declined again to 127 last week, and were 70 below the corrected average. The causes of 35, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Nottingham, Newcastle-upon-Tyne, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Wolverhampton, Birmingham, Norwich, and Leicester.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·4 per 1000 in each of the two preceding weeks, declined to 18·7 during the week ending July 3rd, but exceeded by 4·0 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 11·3 in Aberdeen and 17·0 in Perth to 21·7 in Paisley and 33·2 in Leith. The 557 deaths in these towns included 23 which were referred to diarrhœa, 21 to whooping-cough, 16 to measles, 10 to "fever," 5 to scarlet fever, and 2 to diphtheria. In all, 77 deaths resulted from these principal zymotic diseases, against 87 and 69 in the two preceding weeks. These 77 deaths were equal to an annual rate of 2·6 per 1000, which was 0·7 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had declined from 40 to 16 in the four preceding weeks, rose again to 21 last week, of which 10 occurred in Glasgow, 6 in Leith, and 3 in Edinburgh. The 16 deaths from measles showed a further decline from the numbers recorded in recent weeks, and included 9 in Leith, 4 in Edinburgh, and 3 in Glasgow. The deaths referred to different forms of "fever," which had been 5 and 6 in the two preceding weeks, further rose to 10 last week, of which 9 occurred in Glasgow. The 5 fatal cases of scarlet fever included 2 in Glasgow and 2 in Edinburgh, and the 2 deaths from diphtheria were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 109 and 104 in the two preceding weeks, declined again last week to 86, but exceeded by 11 the number in the corresponding period of last year. The causes of 47, or more than 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·7 and 21·8 per 1000 in the two preceding weeks, declined again to 20·3 during the week ending July 3rd. During the thirteen weeks of the quarter ending on Saturday last the death-rate in the city averaged 27·3 per 1000, the rate during the same period being 15·5 in London and 24·9 in Edinburgh. The 136 deaths registered in Dublin during the week under notice showed a decline of 10 from the number in the preceding week, and included 11 which were referred to

the principal zymotic diseases, against 14 and 11 in the two preceding weeks; of these, 4 resulted from diphtheria, 2 from measles, 2 from scarlet fever, 2 from diarrhœa, and 1 from whooping-cough. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·0 in Edinburgh. The fatal cases of diphtheria, which had increased from 1 to 5 in the three preceding weeks, declined to 4 last week. The mortality from measles, whooping-cough, and diarrhœa corresponded with that recorded in the preceding week, while that from scarlet fever showed an increase. The 136 deaths in Dublin last week included 22 of infants under one year of age, and 25 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a marked decline from the numbers returned in the preceding week. Five inquest cases and 5 deaths from violence were registered; and 55 or more than a third, of the deaths occurred in public institutions The causes of 11, or more than 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-MAJOR HERBERT J. R. MOBERLEY will shortly join at Woolwich. Surgeon-Captain Alfred P. Blenkinsop proceeds to Dublin for duty.

ROYAL HORSE GUARDS.—Surgeon-Lieutenant-Colonel H. F. L. Melladew, M.D., is placed on retired pay. Surgeon-Captain Henry Mitchell, from 2nd Life Guards, to be Surgeon-Major, in succession to Surgeon-Lieutenant-Colonel Melladew.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Moore, A.M.S., has been directed to proceed to Poona to officiate as Principal Medical Officer, Poona District, vice Surgeon-Colonel Atkins, A.M.S., proceeded on leave. Brigade-Surgeon-Lieutenant-Colonel Charles John Walford Meadows, Bengal Establishment, retires from the service, subject to Her Majesty's approval.

ARMY MEDICAL RESERVE OF OFFICERS

Surgeon-Captain James Cagney, M.D., 20th Middlesex Volunteer Rifle Corps, to be Surgeon-Captain.

MILITIA.

Infantry: 3rd Battalion the Connaught Rangers: Honorary Surgeon-Major G. W. Hatchell resigns his commission, also is permitted to retain his rank and to wear the prescribed uniform on his retirement.

VOLUNTEER CORPS.

Artillery: 1st Essex (Eastern Division, Royal Artillery): Charles Forsyth, M.B., to be Surgeon-Lieutenant. *Engineers:* 2nd West Riding of Yorkshire (Leeds): Henry Waite, gent., to be Surgeon-Lieutenant. *Submarine Miners:* The Tees Division: John Watkin Edwards, M.B., to be Surgeon-Lieutenant. *Rifle:* 4th Volunteer Battalion the Durham Light Infantry: The under-mentioned Surgeon-Lieutenants to be Surgeon-Captains: T. Benson and H. A. Collinson, M.B. 1st Dumbartonshire: David Christie, M.B., to be Surgeon-Lieutenant. 18th Middlesex: Surgeon-Major Anthony Hickman Morgan, D.S.O., retired, late Army Medical Staff, to be Major.

VOLUNTEER MEDICAL STAFF CORPS.

The Glasgow Companies: Surgeon-Lieutenant J. B. McKenzie Anderson, M.B., to be Surgeon-Captain.

THE MOSCOW CONGRESS.

As an inducement to Service members of the profession to attend the Twelfth International Congress at Moscow from August 19th to 26th next, the organising committee of the tenth Section (military medicine and hygiene) offer free lodging in the wards of the Surgical Clinique to a limited number of their foreign colleagues. The institution was evacuated on June 1st in order that the whole of the interior might be repainted, washed, and thoroughly cleansed, and all the beds and bedding are to be scrupulously disinfected. There is room in the building for seventy-five persons, of whom eighteen can have separate apartments, the remainder being accommodated in wards containing from four to eight beds. Lodging in Moscow is no doubt both hard to find and expensive when found, so probably medical officers will be glad to avail themselves of the kind and thoughtful invitation of their Russian *confrères*.

OUTBREAK OF CHOLERA AT MUTTRA.

We learn, on the authority of the *Times of India* of June 18th, that there has been a sharp outbreak of cholera among the men of the 5th Lancers at Muttra, fifteen deaths having occurred out of twenty-three seizures.

It is estimated that there are at present some fifty vacancies in the Army Medical Service to be competed for at the next examination, the same number in the Medical Service of the Navy, and eighteen are notified in the Indian Medical Service.

Correspondence.

"Audi alteram partem."

"THE LUNACY ACT, 1890, AND ITS AMENDMENTS."

To the Editors of THE LANCET.

SIRS,—Your correspondent, "Formerly a County Asylum Superintendent," I am glad to see, suggests as a remedy for the present evils the *abolition of lunacy certificates*. I have long maintained that the lunacy certificate should be abolished as constituting a grievous interference with the liberty of the subject in obtaining medical treatment. That a person suffering from disease of the brain must obtain, or have obtained, the authorisation of a magistrate before going to a sanatorium for treatment would be grotesquely absurd if it did not cause such serious evil. The public would rebel at once if the lawyers demanded that a man with a broken leg should be haled before a magistrate prior to being taken to a hospital. The broken leg can be seen, but unfortunately the broken brain is not so visible.

If there is danger of asylums admitting or retaining sane persons these institutions should be so supervised as to render this impossible, and this supervision should be accomplished by supervisors appointed and paid by the State. If the medical profession possessed any solidarity it would not tolerate for a moment the present position of matters. The duty of signing certificates and of making reports in regard to these sick persons is not only thrust upon medical men by law, but these laws are conceived and directed against the profession very much as if against the habitual criminal class.

The result of all this insane legislation, as it may appropriately be called, is that to avoid certification, or from fear of it, patients are kept from appropriate treatment, with the consequence that homicides and suicides are rife, while cases that might have recovered become chronically insane. A second result is that asylum medical officers have half their time occupied in filling up endless forms, reports, statements, &c., many of them utterly absurd and useless, but one at least, the periodical certification form, positively prejudicial, having often resulted in the discharge of dangerous lunatics. The proportion of medical officers in asylums is wofully small, and with the ever-increasing addition to the always heavy duties of administration little time or energy is left them for the treatment of their patients. The Lunacy Laws, indeed, are probably the most efficient cause in preventing that popular subject, "the increase of insanity," becoming "the decrease of insanity." The disease is clear, but what is its cause and what the remedy? The cause is patent and obvious. The Lord Chancellor is at the head of the lunacy system. Hence the anomaly of a Lunacy Commission, entrusted with the supervision of the treatment of insanity throughout the kingdom, being mainly composed of barristers. This ridiculous state of affairs is about comparable to what should obtain if the Lord Chancellor were supreme over the Admiralty, when no doubt we should see an equal number of barristers and naval officers commanding our fleets, while our captains

of ships would spend all their time in forms and correspondence in regard to why Jack had had his grog stopped.

For many years past I have taken part in representations, petitions, and deputations to successive Lord Chancellors in regard to lunacy legislation, and I am fully convinced that this is waste of energy. The remedy for the present wretched state of affairs is to approach Parliament directly, with a view to have the Lord Chancellor's jurisdiction only over the property of the insane, but to place lunatics for their care and treatment under the charge of a Minister of Public Health. I would suggest the formation of an association to promote this object, and should be glad to hear from others interested in, and willing to work to, this end.

I am, Sirs, your obedient servant,

July 5th, 1897. HENRY RAYNER, M.D. Aberd.

THE GENERAL MEDICAL COUNCIL AND THE QUESTION OF MEDICAL REGISTRATION IN INDIA.

To the Editors of THE LANCET.

SIRS,—It will please hundreds of your readers, both at home and in our great Indian Empire, if your excellent proposals for definite action being taken by the General Medical Council are followed out by that august body. There is a simple task before our medical legislators, and, in common fairness to our brethren in the East, they ought to take it up most cheerfully. Could not the registrar of the Council invite the kind attention of the president to the subject, or, failing that, would not some member of the Council befriend India's cause by placing a motion with reference to medical registration in India before the next meeting of that body? Meanwhile I should like to draw further public attention to the able article on this question in THE LANCET of July 3rd by placing before the profession the following article taken from the *Indian Medical Record*, a journal that has worked hard for years to obtain a Medical Registration Act for India:—

"Any Act of the legislature which contemplates the protection and registration of medical practitioners in India has a very complex problem to solve. Side by side with the large body of orthodox doctors, is an innumerable host of indigenous practitioners, whose methods, widely differing as they do from western medicine, still command a very wide sphere of employment and confidence with the purely Indian communities. Kobirajes, hakims, vaids, &c., are acceptedly medical practitioners of certain systems, and any Act contemplating registration of medical practitioners must deal with these classes also. They are part and parcel of the domestic life of the people of the country, and they cannot, and must not, be ignored. That their varied systems possess much that is effectual and commendable in the treatment of disease is freely admitted by Western physicians. But that their practices are often based upon most imperfect and distorted suppositions of the anatomy and physiology of the human organism, are facts still more patent. It is to this deficiency in their systems of a fundamental knowledge of pathology, that most of the fatal errors of these indigenous practitioners are due. A little knowledge is admittedly a dangerous thing. And yet it is a glaring fact that these men are often absolutely illiterate and utterly devoid of the faintest knowledge of the position of the organs they are supposed to be treating, and have only traditional ideas of the virtues and actions of the drugs they prescribe. It is as reasonable and right to expect the man who poses as a healer of disease to possess a knowledge of the organs he is dealing with as it is to compel efficiency in mechanical and engineering science in the man who takes charge of a steam engine. It is as reasonable and right to raise standards of efficiency for medical servants of the public as it is to demand and enforce education, training, and experience in engineers, boiler-makers, ship captains, plumbers, and every other practitioner of every other art. It does not follow, because centuries of public or State neglect and indifference have left medical practitioners to ply their art without let or hindrance in this country, that such neglect and indifference towards the public should continue for ever. We have endeavoured by repeated articles upon the subject of medical practice in India to prove that no excuse exists for the withholding of a Medical Registration Act by the Government. The only objection that has been raised has reference to the question of the incorporation of indigenous practitioners within the scope of any such enactment. We would most cordially commend in the first instance that legislation should embrace all practitioners. That kobirajes, hakims, vaids, &c., be enrolled into separate lists and that registration be most carefully and exhaustively made of each and all of them, with a distinct understanding that after the date of registration no man shall be permitted to practise medicine by any system whatever, except he can produce evidence of a fair standard of general preliminary education and proof of attendance for a certain period at a recognised college of medicine for the study of human anatomy, physiology, the pathology of diseases, and also the practical instruction of a hospital or of some registered practitioner of medicine. Surely this is a reasonable demand. We only ask that the kobiraj, the hakim, or the vaid, who seeks to attend the public, should be able to provide that public with some guarantee of his knowledge of his profession. It would be essentially necessary in the case of all these practitioners to demand a certain number of years of practical study with a member of his craft, and his examination by a duly appointed body of his particular system, to ascertain his fitness to practice his art. After undergoing such education and examination as the State would enact, he would be registered as a kobiraj, hakim, vaid, &c., as the case might be.

"The rapid growth and development of medical education in India, as seen by the thoroughly well-equipped medical schools and hospitals to be found in every province, and, indeed, in almost every large subdivision of such province throughout this country, has rendered the acquirement of a practical, intelligent, and reliable knowledge of anatomy, physiology, pathology, and materia medica—the fundamental studies on which the superstructure of rational medicine is built up—a very easy and cheap accomplishment. Men of the country possessing the necessary preliminary educational requirements may go through the whole curriculum of a medical collegiate training of five years' duration by the expenditure of the modest sum of five rupees monthly in any Government college. Surely this is cheap enough!

"With these easily accessible and inexpensive means of obtaining an education in anatomy and physiology, it would be no hardship to compel every candidate for medical practice, by any and every particular system, to acquire such knowledge.

"If the indigenous systems of medicine are worth anything, this process of compulsory education would certainly put them on their mettle. It would cause research into their hidden virtues, reform of their defects, and ultimately lead to their due and proper recognition in the interests of humanity at large. In time, all that is good and useful in them would find its way into other systems. Hence the adoption of a uniform plan of preliminary education and medical training would, in all probability, cause a coalition of the now diverse and imperfectly understood indigenous systems into a harmonious and regulated standard of medical practice throughout the Indian Empire.

"Our object in advocating the early adoption of State regulation of medical practice is not to deprive the poor of their present methods of medical relief, or to exclude the older systems, and in their place force *nolens volens* upon the people the system we represent. Our cry is reform; our object is the advancement of the public good. Regulation, not lawlessness in practice; growth and development, not stagnation; improvement, not annihilation. This is our policy. And in this we claim the sympathy and good judgment of all practitioners of medicine, be they Western or Eastern. Upon the lines we have here enunciated, a complete and comprehensive system of medical registration may at once be enacted, without clashing with any of the social customs of the people of the country, or in any way conflicting with the varied interests of the present complex community of medical practitioners in India."

This article makes out a strong case for medical registration, and it is to be hoped that the General Medical Council will not object to stretch forth its powerful hand to help our brethren in the East as far as it can do so under the provisions of the Medical Act.

I am, Sirs, faithfully yours,

Otley, July 5th, 1897. R. E. WILLIAMSON, M.B. Edin.

To the Editors of THE LANCET.

SIRS,—I have read with much pleasure and interest your leading article in THE LANCET of July 3rd, dealing with the question of medical registration in India. I am sure that all who feel concerned in the well-being of our medical brethren in that country, whether British or Indian, will cordially welcome the valuable suggestions you have made with a view to dealing effectually with a much needed legislative measure, which, if carried out in some form or other, will prove a great blessing, not only to qualified medical men, but to the people of that land. Your suggestions amount to:—1. The incorporation of Indian graduates in the Colonial section of the British Medical Register. 2. A local or Indian register on the basis of the Medical Register and Directory of the Indian Empire (a compilation due entirely to private enterprise), brought out under Government authority, in which all classes of medical men in India, including the various medical subordinate services and minor grades of practitioners, should be carefully incorporated.

With regard to Indian medical graduates, the question of registration need not, as you clearly point out, involve any difficulty. Their qualifications are registrable in the United Kingdom under the Medical Act. They have but to avail themselves of the privilege of registration. But here a difficulty arises. In Great Britain and in every other British colony except India registration confers certain rights, protection, privileges, and status, for no qualified man is recognised as qualified unless his name is held on the official register. He has no legal status, he cannot claim the protection of the law courts, he cannot obtain a State appointment, and he cannot be regarded as a genuine member of the medical profession, unless his name can be found within the covers of the Medical Register. If it is honourable to be on the Register, it is akin to being dishonourable not to be on it.

Unless some such privileges are conferred on Indian graduates they can hardly be expected to indulge in the expense which registration involves. This difficulty can, however—as you further suggest—be very easily removed by a *Gazette* Order of the Government of India, promulgating a Notification that henceforth State appointments, open to

Indian University graduates in Medicine, shall be given only to duly registered candidates, and that the Government and the law courts of the country will not recognise the legal status of any but registered graduates. Such a measure would immediately settle the question of registration in India in so far as it concerns registrable diplomas. In this matter also you offer a very feasible solution to another phase of the difficulty—namely, the one of getting the General Medical Council to move in the way suggested here. Clearly the General Medical Council has a perfect right to urge the question of advancing and encouraging the registration of registrable qualifications by virtue of the fact that the Medical Act has been made applicable to India so far as registration (under the control of the Council) is concerned. May I suggest that the General Medical Council be asked to take such steps as will advance and encourage medical registration in India at its next session?

With regard to the junior grades of practitioners whose qualifications are not admissible to the British Medical Register, there is the remedy of the local register, referred to in your article; but I certainly agree with you that it is time that such powerful aid as our British General Medical Council is capable of giving to that section of our profession in India, which is entitled under the Medical Act to claim and to receive the same, should not be withheld now that the subject has received the approbation and support of the medical press in England, and the attention of our Council has thus been publicly invited to it.

I am, Sirs, yours faithfully,

London, July 4th, 1897. "FORTY-ONE YEARS IN INDIA."

THE SALISBURY TREATMENT.

To the Editors of THE LANCET.

SIRS,—Could you or any of your readers explain to me why I have received two or three letters like the enclosed asking me if I practise "the Salisbury treatment"? What is the "Salisbury treatment," and who does practise it?

I am, Sirs, your obedient servant,

THE DOCTOR OF GROSVENOR-STREET.

Grosvenor-street, W., July 2nd, 1897.

[ENCLOSURE.]

"June 26th, 1897.

"Dr. ——, Grosvenor-street.

"DEAR SIR,—I understand you recently attended a Mr. —— and also a Mr. ——, of B——, and that you practise the Salisbury treatment. Kindly let me know if this is so and whether you could see me on Tuesday and at what time. I purpose returning to B—— on that day. I may state that I have been trying more or less strictly the Salisbury treatment, but wish before continuing it further to have medical advice as to its suitability to my case, &c. I got your name out of a Medical Directory, but am not quite sure that it is the same as mentioned by Mr. —— at B——, not having the address by me. If it is a mistake kindly excuse.—Yours faithfully,

"A. A. A——."

"THE RECENT PRIMARY FELLOWSHIP EXAMINATION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND."

To the Editors of THE LANCET.

SIRS,—By the courtesy of those responsible for the management of the first examination for the diploma of Fellow of the Royal College of Surgeons of England I was permitted to be present, not for the first time, at the recent examination which is so severely criticised in the columns of THE LANCET of July 3rd. As I have been engaged in teaching anatomy for some fifteen years I may lay claim to some knowledge of the value of the examination, and as I am not, nor am ever likely to be, a Fellow of the College, I hope I may be considered to be capable of taking a perfectly impartial view of its merits and demerits. The first contention of your correspondent is that the paper questions "have about as much to do with surgery as playing the German flute has to do with learning the German language." Now, I have at hand the papers set at the last six examinations, and have been looking them through with the view of seeing how far they substantiate this startling assertion. I am bound to say that they appear to prove the opposite contention. In the last paper the pubic bone with the part which it plays in the mechanism of the pelvis, the structures between the skin and deep fascia of the lower extremity, and the topographical anatomy of the liver are surely subjects quite germane to the work of a practising surgeon. In former examinations such questions have been asked as the anatomy of the rectum from the middle of the sacrum to the tip of the coccyx—clearly with an eye to Kraske's operation—the arches of the foot and the method of their maintenance, the thyroid body, the curves of the spinal column and the movements of its various parts, the ligaments of the knee-joint, the broad ligament of the uterus, the nasal septum, the subclavian artery, the fissures of Rolando and Sylvius and their relations to the skull. Can it for a moment be argued that these questions have no bearing upon practical surgery? It would be tedious and useless to give all the questions, but a dispassionate consideration of them would, I think, show that in every case they involve facts of direct practical value, and that in no sense do they belong to the regions of transcendental anatomy. Again, your correspondent finds fault with the questions asked at the *viva-voce* examination. Would it be fair to inquire whether his knowledge of these questions is based upon hearsay evidence, or whether he has ever taken the trouble to find out by a visit to the examination what is the real nature of this part of the examination? From my own experience at that examination as an onlooker I can affirm that I have never heard any unreasonable question asked, nor has any question been put to a candidate which would require more than very ordinary knowledge to answer until that candidate has made it abundantly evident by his replies that he has already established his right to pass the examination.

What is required, so far as I have been able to form an opinion, is a really accurate knowledge of general anatomy, and this is precisely what most of the candidates fail to show. This is more especially the case in connexion with the subject of the bones, to which the first ten minutes or so of the *viva-voce* is usually directed. Surely your correspondent is not prepared to argue that the attachment of the muscles and the true position of a bone as it lies in the body are questions which should not be put to students? Yet it is precisely over questions of this kind that I have frequently seen students come to grief. Not once, but several times have I seen a candidate unable to show the examiner with any accuracy how the pelvis and os calcis lie in the body. I will conclude my remarks upon this part of the examination by affirming that I have seen and heard nothing in the anatomical part of the examination to which any fair-minded teacher of anatomy has any right to object. Your correspondent also finds fault with the physiological part of the examination, and here, as I am not a physiologist, I cannot reply with the same confidence. At the same time I may say that I have listened to the *viva voce* portion of the examination in this subject, and that I have not heard any questions asked thereat which in my opinion pre-supposed a greater amount of knowledge than the candidate might reasonably be expected to possess. Your correspondent's remedy is the suggestion that the examination should be postponed until a period of two years has elapsed from the taking of the Membership. He must be very ignorant of the facts of the case if he does not know that this would be tantamount to reducing the number of possible candidates by probably three-fourths. How many students are there who care or can afford to go back to the school of medicine for a winter session after having been two years qualified? And yet how few are there who, even at the time that they take their Membership, possess that knowledge of applied anatomy which would or ought to allow of their obtaining the higher diploma? Many students suppose erroneously that the same amount of knowledge which carries them through the anatomical and physiological examination for the Membership justifies them in having what they call "a shot at the Fellowship." The same kind of knowledge is required, but in the higher examination a much greater accuracy is, and in my opinion rightly so, expected from the candidate. The fact is, Sirs, that the earlier years of the student's course are so overloaded with subjects that he cannot find time for the acquisition of that amount of anatomy and physiology without which a sound knowledge of his profession is impossible. Subjects such as elementary biology, chemistry, and physics, which ought to be studied before a student enters a medical school, and materia medica, the greater part of which might with advantage be discarded altogether, are crammed into the same eighteen months, during which the student is expected to master those sciences upon which all the superstructure of his knowledge is to be erected. There is a further explanation of the large percentage of

failures which I have never seen offered, but which must be patent to all teachers of experience. Contrary to the custom with regard to the examinations for the Membership, no evidence of further study is required from candidates who have failed for the primary Fellowship before they are allowed again to present themselves for that examination. Hence we have the recurring failure of men who never go near a medical school from one examination to another, but who continue to present themselves in the hope, the forlorn hope, that by luck or by their exceeding importunity they may some day come safely through the ordeal. All teachers must know instances of such men, and all will agree that they are precisely the sort of persons who ought not to obtain the diploma of Fellow. In conclusion, may I suggest to your correspondent that he should take the trouble to visit the examination next November? If he does I venture to prophecy that he will come away with a very different opinion of it, and of those who present themselves for it, from that which he now holds. I must apologise for the length of my remarks—an answer is proverbially longer than its provocation.

I am, Sirs, your obedient servant,

July 5th, 1897. ANATOMIST.

MEDICAL HONOURS FOR INDIA.

To the Editors of THE LANCET.

SIRS,—Among the deserving members of our profession who were decorated by the Queen on the occasion of her Diamond Jubilee there was one who by an oversight was omitted from the list published by THE LANCET and by every other medical journal of this great metropolis. I refer to His Highness Sir Bhagvat Sinhjee, K.C.I.E., M.D., F.R.C.P., LL.D., Thakore Saheb of Gondal, Kattiawar, the most enlightened of all the princes of India. He was created a Grand Commander of the Indian Empire, a reward most well deserved for his unswerving loyalty to the British Crown and his beneficent rule over a contented, happy, and prosperous State.

I am, Sir, yours faithfully,

London, July 4th, 1897. ANGLO-INDIAN.

THE BATTLE OF THE CLUBS.[1]

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from p. 54.*)

NOTTINGHAM.

Strength of the Medical Union.—Negotiations with Insurance Companies.—The Establishment of a Four-shilling Minimum.—Future Policy.

IT will be remembered that in the spring of last year the Nottingham Medico-Chirurgical Society took the initiative in forming a local medical union so as to deal with the question of club practice and other ethical and economical problems.[2] A little more than a year has now elapsed since the union was constituted, and it is satisfactory to report that great progress has been accomplished. Out of 105 practitioners in and about Nottingham 85 are in union. Nor does this mean that the remaining 20 will act in hostility to the union. At least half of the twenty are in nowise opposed to the objects of the union. They do not care to be attached to an association and to submit to its discipline. One or two have an objection—a political objection—to what appears to them in the light of trades unionism, but they are nevertheless strongly in favour of the reforms which the union strives to accomplish, and will not do anything to thwart its action. Thus, out of the 20 outsiders about half may be considered as friends, though they are not adherents; but, on the other hand, it must be recognised that some are actuated solely by interested motives. It was a remarkable fact that no sooner had the union been constituted than several young practitioners mysteriously made their appearance in Nottingham. It is alleged that they had no friends in the town, so it was shrewdly suspected that they had been induced to come to Nottingham by the insurance companies. These institutions seem to have imagined that, as a medical union had been formed, a strike against the medical aid companies would ensue at an early date, and they were anxious to have medical practitioners on the spot who could take up the work abandoned by the unionist medical men. In any case the new men arrived within a month of the formation of the union. Of course, the union officials waited upon them as soon as they arrived, explained the situation, and urged that if they had not come in opposition to the interests of the medical profession they would join the union. One of the medical men in question did so at once, but three others absolutely refused, and the remainder hesitated.

The first action taken by the Nottingham Medical Union was with regard to the two great life insurance companies—the London and Manchester Industrial Assurance Company, Limited, and the Liverpool Victoria Legal Friendly Society, Limited. The former of these two insurance companies does a large business in Nottingham. It advertised its medical officers and sent out agents to tout for them. Well-to-do private patients were induced to insure their lives and obtain medical aid for which the medical men were paid only 4*s.* a year when they had been accustomed to receive the usual fees.[3] These matters were discussed by the committee of the medical union, and one of the medical officers in the service of the London and Manchester Industrial Assurance Company offered to write on his own account, but with the assent and approval of the medical union, to that company. In his letter he explained the various objections entertained by the profession and asked for alterations. In response the company sent one of their principal agents or inspectors down to Nottingham, and a conference was held between the members of the medical union committee and this agent. The agent explained the methods and policy of the London and Manchester Industrial Assurance Company, and sought to demonstrate that they were actuated by philanthropic motives, and that they worked for the benefit of the medical profession. Of course, it was objected that as they advertised and canvassed for a few medical men, to the exclusion and detriment of all the others, they could not be taken as working for the advantage of the profession as a whole. The members of the medical union committee further complained that the medical officers in the service of the London and Manchester Company only received a penny a week for the persons insured, though the latter paid three-halfpence per week. Something might be taken for the cost of collecting and managment, but a third of the total subscribed was too large a proportion, particularly as the money paid for life insurances, in which the medical officers were in nowise interested, was collected at one and the same time. It might therefore be considered that a profit was sweated out of the work done by the medical officers, both directedly—namely, the halfpenny per week per member—and indirectly—namely, the money made by the life insurances which the services of the medical officers enabled the company to effect. Then all persons insured for a sum not exceeding £20 were admitted without medical examination. The company is careful to guarantee itself against any serious loss through the ill health of its subscribers, but its medical men are in nowise protected, and in effect they are obliged to accept persons who are obviously in bad health, so long as they do not insure for more than £20. This entails a great amount of work on the medical officers, for which the penny per week paid cannot be considered anything like an adequate compensation.

In answer to these complaints the agent of the London and Manchester Industrial Assurance Company explained that though members were accepted who insured for less than £20 without any medical examination, still these subscribers had to sign a declaration to the effect that they were in good health when they first subscribed. If any medical officer could prove that this declaration was not true then the subscriber's premium would be struck off. The agent also declared that if the medical officer denounced anyone as being too rich to belong to the society, such a person would likewise be struck off the lists. Finally, the agent promised that the names of the medical men printed on the back of the company's handbills which were circulated broadcast would be removed. The distribution of these handbills constituted an advertisement, not only of the company, but also

[1] A reprint of the previous articles on the above subject has been published in book form entitled, "The Battle of the Clubs," and can be obtained from THE LANCET Office, price 1*s.*

[2] See THE LANCET, March 21st, 1896, or the reprint of "The Battle of the Clubs."

[3] See for full details THE LANCET, April 4th, 1896, and the "Battle of the Clubs" reprint.

of the medical men in its service. The bills now published no longer bear the names and addresses of the medical officers, therefore this grievance at least has been settled. The agent further promised that the canvassers or collectors of the company should no longer tout on behalf of their medical staff.

In view of all these assurances the medical union determined to defer further action in the matter for seven months. It soon, however, became evident that these promises were not faithfully kept. Practitioners wrote to the medical union to complain of the continued aggressiveness of the canvassers, and that some among them were touting on behalf of new medical men who had mysteriously appeared in the town since the formation of the medical union. Some of the medical officers in the service of the London and Manchester company wanted to resign at once, but the medical union dissuaded them because isolated resignations would be of no use, and in the face of the number of medical men imported into the town it would not be safe to proceed to extremes without careful preparations. So to feel their way the medical union invited all the medical practitioners in the town to sign the following declaration:—

"I hereby agree after June 30th not to hold office to any combined medical aid and insurance society, or to have a private medical aid which employs a canvasser; and I also agree not to meet in consultation or in any way assist professionally any medical man who is connected with such medical aids."

A large majority of the Nottingham practitioners assented to this agreement, but they were not unanimous, so that probably the work of organisation and persuasion will have to be pushed further forward before action can be taken.

Another circular, by which all the members of the profession were asked not to accept any club or contract work for less than 4*s.* per member per annum, met with a much better response. It was signed, not only by the medical union, but even by the non-unionists. Out of 110 medical men only 5 refused to sign. One of these five gave as his reason, not that he was opposed to the proposal, but that it was his habit never to sign anything. Another refused to sign because the matter did not concern him, for he had no clubs and never meant to have any, and he has kept his word. Thus it may be said that the profession in and about Nottingham is, practically speaking, unanimous in maintaining a 4*s.* minimum.

In view of a possible conflict with the insurance companies which organise medical aid for their subscribers, the medical union has discussed the feasibility of organising a public medical service to be managed exclusively by the medical men themselves. The chief objection to such a scheme was that its success would be doubtful if canvassers were not employed, and, on the other hand, the members of the medical union were much opposed to the idea of sending out canvassers. It was thought preferable to enlarge the scope and action of the existing Nottingham Provident Medical Aid Society, which is not a sweating or speculative institution, but can be considered more in the light of a charity. This society was founded in 1859, and should be almost entirely managed by medical men, but the latter have neglected their duties, so laymen had to be placed on the committee. Within the last year, and under the impulse of the medical union, a branch has been opened out in the suburb of Hyson-green, but the local medical men have failed to push this movement, so that the Hyson-green branch barely pays its own expenses. Doubtless it would be very useful if a general medical strike occurred, but if greater energy is not shown it may not live till then. This branch dispensary is also, unfortunately, situated in a back street and difficult to find.

Viewing all these facts together it must be acknowledged that the medical profession at Nottingham have set an excellent example in the formation of their medical union. The proportion of medical men who have joined as compared to the number in the town and neighbourhood is very high, and in having thus so well filled up its ranks the Nottingham Medical Union deserves the warmest praise. The Nottingham Medical Union may be felicitated, not only on its numbers and strength, but on its prudence and circumspection. Though a union to be of any service must be a fighting union, there can be no greater folly than to rush into a struggle without very elaborate and patient preparation. Now it is very evident that the Medical Union has not yet made up its mind how to act with regard to the great insurance companies. In the meanwhile there must be no isolated resignations and no individual struggles. But why attack the strongest first? Why not commence with the "sick and annual clubs" held in public-houses? That the skill of medical men should be utilised to enable a publican to sell his beer and gin is surely the greatest of all scandals, and the Nottingham Medical Union might find in these public-house slate clubs the weakest line of resistance. Certainly this grievance does not affect so large a population, but it would be better for the union to first try its 'prentice hands in a skirmish before attempting a pitched battle. Besides, in its struggle to prevent hospital abuse the union has already a very big question in hand.[4] Also a strike against the great insurance companies would disturb the habits of a large section of the population, and it is first necessary to carefully and fully inform all concerned what are the points at issue. Above all, the Nottingham Medical Union must make it very clear that it is acting in the interests of the public as well as of the profession. This can be done if enough trouble is taken; otherwise the mass of the population will certainly not understand what are the grievances. They will simply conclude that the medical men are only striving to get more money, and will probably take sides against the profession. It must, on the contrary, be rendered clear to everyone that when people who can afford to pay avail themselves of clubs, &c., intended only for the poor, this is to the disadvantage of the latter. Further, it must be shown to the rich and poor alike that everything which tends to degrade the medical profession is to the disadvantage of the entire community. The first object of a medical union should be to educate the public at large to the comprehension of these facts, and it is only when public sympathy has thus been enlisted that a big struggle may be attempted.

The joint secretaries of the Nottingham Medical Union are Mr. Paul (Derby-road) and Mr. Laws (East Circus-street), while Mr. Mackie (Shakespear-street) is secretary of the sub-committee appointed to deal with the question of hospital abuse. Dr. W. B. Ransom is the president and Dr. Mutch the treasurer of the union. The objects of the Nottingham Medical Union are: "(1) To encourage cordial relations between medical men practising in the district; (2) to give opportunities for discussion and interchange of views on the business side of medical practice; (3) to obtain the combined action and consolidated influence of members of the union upon points of difficulty which may arise in medical aid, contract, and hospital practice; and (4) generally to safeguard and support the interests of the medical profession in the town and district."

The Rules of the Nottingham Union are as follows:—

1. This society shall be called the Nottingham and District Medical Union, having for its object to safeguard and support the interests of the medical practitioners in the town and district.
2. Every registered medical practitioner shall be eligible for membership if approved by the council.
3. Each member shall pay an annual subscription of 5*s.*, due on May 1st in each year.
4. The affairs of the union shall be managed by a president, two secretaries and treasurer, and a council of fifteen members for the towns and ten for the district. Nine shall form a quorum.
5. The officers shall be elected at the annual meeting in May of each year, except that three of the town and two of the district members of the Council shall be co-opted by the Council.
6. The Council shall have power to fill up vacancies in their own body.
7. The Council shall meet once a quarter, and when convened by the hon. secretaries, to consider applications for advice or assistance, and generally to carry out the policy of the Union, and may call a general meeting of the Union at any time if considered necessary.
8. A special general meeting shall be called by the president at any time upon a requisition signed by six members, such special meeting to consider no other topic than that for which the meeting was called.
9. *No member of the Union shall oppose any practitioner in any course of action which he may take with the previously expressed sanction of the Council for the general good of the profession.*
10. Any member acting, in the opinion of a special meeting called for the purpose, contrary to the laws and regulations of the Union, shall, upon a majority of at least three-fourths of the members present, be suspended or expelled, and without appeal, from the Union.
11. A special meeting called for the purpose of considering the conduct of any member of the Union shall only be convened after fourteen days' written notice has been sent to the last-known address of each member, and such notice shall state clearly the purpose for which such meeting is convened.
12. No new law shall be adopted and no existing law shall be altered or rescinded except at the annual general meeting or at a special meeting called for the purpose, and fourteen days' notice of such proposed alterations, signed by at least three members, shall be sent to every member of the union in a circular convening the meeting.

[4] See THE LANCET, June 5th, 1897.

THE HERMITE PROCESS AT BOMBAY.—The Municipal Commissioner of Bombay and some members of the Plague Committee with General Gatacre recently inspected the Hermite process as applied to Bombay sewage.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Opening of the New General Hospital, Birmingham.

ON Wednesday, the 7th inst., amid a scene of much enthusiasm, the New General Hospital was declared open by the Princess Christian on behalf of Her Majesty the Queen. The day was observed as a general holiday in the town, and favoured by fine weather large crowds of people availed themselves of the opportunity to witness the decorations in the streets, and the preparations made for receiving the distinguished visitors. Her Royal Highness Princess Christian was accompanied by Prince Christian and the Princess Victoria. On their arrival, being met by the Lord Mayor (Councillor James Smith), a procession was formed to the Council House, where an address was read by the Recorder, expressing the deep sense of honour conferred upon the city of Birmingham by a Royal visit in the auspicious year of the Jubilee. It seemed, said the address, "most fitting that the object of the visit of Her Royal Highness should be to open one of those noble hospitals for the sick and suffering, the growth and development of which institutions constitute one of the most interesting features of Her Majesty's reign." The Princess having formally replied, luncheon was given by the Lord Mayor to a select party at the Council House. After this the procession re-formed and proceeded to the site of the new buildings, which were declared open by the Princess amid a flourish of trumpets. The senior physician and senior surgeon and the chairman of the medical committee were, among others, presented to the Princess. The Royal party returned to London by a special train at 4 45 P.M. The work of the new hospital was begun in 1892, the total cost being calculated at £210,000. The foundation-stone was laid by the Duke of York on Sept. 8th in that year. The great feature of the undertaking—one upon which the committee congratulate themselves with well-earned merit—is that it has been opened free from debt. The response made to the final application for funds has been liberal, and effectual in producing this much-desired culmination of their efforts. The hospital is replete with every modern improvement; no trouble or exertion has been spared to render every department complete. The zeal and energy of the architect, Mr. W. Henman, has been rewarded by a monument of his untiring interest and exceptional ability in providing an institution so well calculated to meet the most advanced requirements of the present age.

A Feat of Endurance.

While Princess Christian was opening the New General Hospital an athletic feat was being performed in Birmingham by a young cricket professional which would have been witnessed by many more people if it had not been contemporaneous with the royal and charitable function. Tyldesley, a Lancashire cricketer, made 100 runs in both of his innings against the home county—a feat which has only been performed by five other men, and which requires vigour, precision, and resourcefulness to a degree that can with difficulty be over-estimated.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the Lancashire and Cheshire Branch of the British Medical Association at Owens College.

THE annual meeting of the Lancashire and Cheshire Branch of the British Medical Association was held on Wednesday last at Owens College. There was a large attendance. The retiring President, Dr. Vernon, of Southport, took the chair, and after a few words of graceful introduction gave place to Dr. S. Woodcock, the new President. Dr. Woodcock's address was listened to with great attention and many passages were warmly applauded; it dealt chiefly with medical reform. He believed that "a review of sixty years of effort and result would be more accurately expressed by the term 'miserable failure' than even by that of 'modified success.'" He spoke of the great efforts of Thomas Wakley, "the pioneer of medical reform," but said that in spite of all he did for its suppression quackery was still rampant; "advertisements imposing upon the credulity of the public appeared on the pages of nearly all our periodical literature; unqualified men practised with impunity, the present law only taking cognisance of the assumption of titles; and there were still twenty gates opening into the avenues of professional life." The Medical Act of 1886, he thought, was more entitled to attention for what it omitted than for what it accomplished. "It gave the practitioner of medicine ..... a miserably small share of representation on the General Medical Council." The accession of five direct representatives had some effect on that "lethargic body," but this was due more to the quality of the men than to their number. He criticised the constitution of the British Medical Association, and wished it, without abandoning its scientific work, to become a more efficient organisation for promoting and defending the interests of the profession. He wanted increased and improved local government, and would have all members joining the Association compelled to enter through the branches in which they practised or resided. If the nearly 35,000 members of their profession could approach agreement "they could make their own terms with Parliament," and "the end he had in view was such amendment of the Medical Acts as would afford protection both to the public and the profession." The report of the council and financial statement read by the secretary, Dr. Barr, showed the membership to be 1059—the highest number yet reached. There was a balance in hand of £394. The following appointments were approved:—President-elect, Mr. W. Berry of Wigan; vice-presidents, Mr. J. Holden and Dr. C. J. Renshaw; honorary secretary, Dr. Barr; representatives on the Parliamentary Bills committee, Dr. A. Godson, Dr. A. Brown Ritchie, Dr. G. E. Shuttleworth, and Dr. S. Woodcock. On the motion of Dr. J. B. Brierley, seconded by Dr. Holden (Preston), a resolution was passed expressing regret that the Midwifery Nurses Bill had not been carried through Parliament. The business proceedings were carried through with promptitude and so some little time was gained for the scientific work, which at these meetings is so often pushed aside in favour of warm discussions on medical politics. The dinner was attended by the Dean of the Medical Department of Owens College, the Deputy Lord Mayor of Manchester, Alderman Lloyd, and Sir Bosdin T. Leech, Dr. S. Woodcock presiding. In proposing "The Owens College and other Medical Schools," Dr. Vernon contrasted the facilities offered here for medical education in 1848 with the present magnificent school, "where there were 400 students gathered under one roof and taught by professors of European reputation." Professor Delépine responded. Mr. W. Berry, president-elect, proposed "The Branch and its Office Holders," to which Dr. Barr responded.

The St. John Ambulance at the Royal Agricultural Show.

What with the Jubilee celebrations, into which Manchester entered with enthusiasm, the Royal Agricultural Show at Old Trafford, and the visit of the Duke of York, there has been enough to break through the ordinary routine of life in this busy commercial centre. For the last few years the St. John Ambulance Association has had a well appointed hospital at the Show. This is due to the indefatigable energy of Surgeon-Major Hutton, who was on the ground the whole time. He was ably assisted by Surgeon-Captain Darwin, M.D., 2nd V.B. M.R., and Surgeon-Captain Fairclough, M.D., V.M.S., two St. John nurses, and seven St. John Ambulance Brigade men, under the supervision of Mr. Superintendent Goodwin, and most valuable first aid has been given. Besides numerous minor cases, as burns, scalds, cut fingers, sprains, faints, &c., several serious cases were attended to, and then removed to the Salford Hospital. When H.R.H. the Duke of York paid a special visit of inspection yesterday week, he seemed much pleased with what he saw, and said a few kindly words to the patients.

The Explosion at a Chemical Works.

At the adjourned inquest respecting the deaths of two men from the explosion mentioned in my last communication some light was thrown on its cause. The still was charged with about twenty tons of coal tar, which was added to about ten tons of oil, which had been left after an oil-distilling process thirty-six hours previously. The engineer said that after the fire was lighted, about 8 A.M., he saw Duddle, one of the men killed, who said the still "was going on all right." He thought the explosion must have

been due to a block in the coil or in the pipe leading from the still. In answer to Mr. Rogers, factory inspector, the witness said they took no steps to ascertain that the courses were clear before charging. The manager of a branch works said there was only one possible explanation—a blocking of the coil or a stoppage of the pipe between the still head and the condenser, which, in his opinion, could have been discovered before the explosion. The verdict was that the explosion was due to the accidental stoppage of the worm. Mr. Rogers said that he would make recommendations "in the direction of seeing that the pipes and passages were clear before the commencement of operations." The coroner made the very sensible remark that "it was not sufficient to say to men that they must do this or that; it was better to require them to make an entry in a book certifying that they had done it."

July 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Society of Edinburgh.

AT the meeting of the Royal Society of Edinburgh, held on Monday, July, 5th, Professor Fraser made a further communication on antidotes for snake-bite, the title of his communication being "The Anti-venomous Properties of the Bile of Serpents and other Animals, and an Explanation of the Insusceptibility of Animals to the Poisonous Action of Venom introduced into the Stomach." He had made experiments with the bile of the African cobra, the puff-adder, the rattlesnake, and the grass-snake, testing them against the venom of the African and the Indian cobra. Rabbits were used for the experiments. The results showed that the bile of venomous serpents when mixed with venom prevented lethal doses of the latter from producing death. A quantity of bile smaller than the amount of venom was sufficient for this purpose. Bile introduced hypodermically was itself poisonous, but he had succeeded in separating from the bile its antidotal constituent. He had experimented with this, and there was strong evidence to show that not only was bile able to render serpent's venom inert, but also to suggest that from bile there might be produced an antidote for snake-poisoning which was at least equal to the most powerful anti-venene or anti-venomous serum obtained from immunised animals.

Convalescent Home for the Victoria Infirmary, Glasgow.

The directors of the youngest of the Glasgow general hospitals have never been wanting in the enterprise and energy necessary to secure the reputation and practical success of the institution under their care. In many respects a model infirmary, the Victoria has now acquired the valuable complement of a convalescent home. The home, which is situated at Largs and will accommodate forty patients, was opened on June 27th by Sir Renny Watson, the chairman of the infirmary. Among those present were Professor Gairdner, Dr. Ebenezer Duncan, Dr. Alexander Napier, Dr. A. E. Maylard, and Mr. R. H. Parry. The total cost of the home and grounds has been £5000.

Glasgow University.

The clinical portion of the final examination for degrees in medicine and surgery has now been completed, and the written examinations commence to-day. The "orals" will continue for the greater part of the month, and the graduation ceremony is fixed for the 22nd inst. The medical classes closed for the summer session on the 25th ult. The prizes awarded by the directors of the Ear Hospital for competition among the students attending Dr. Barr's class have been gained by Mr. J. B. Miller and Mr. David Sloan Harvey. At the June meeting of the University Court sketch plans for the new botanical and engineering laboratories to be placed on the frontage of the university avenue near the gymnasium were submitted. The court approved of the report which had been adopted by the General Medical Council in reference to the powers of sanitary inspectors under the Public Health (Scotland) Bill, and ordered copies of their decision to be forwarded to the Lord Advocate and others.

Handsome Donations to Glasgow Charities.

In commemoration of the Queen's Diamond Jubilee ex-Lord Provost Sir James Bain has given the sum of £3000 to various medical institutions in Glasgow. The Royal Infirmary receives £1000, the Western Infirmary £750, and the Victoria Infirmary £500.

Insanity in Scotland.

Mr. John Carswell in his annual report as certifying physician in lunacy to the Glasgow Barony Parish Council, again notes an increase in the number of persons placed on the lunacy roll. The number for the last year was 263, as compared with 237 in the preceding year. Mr. Carswell, however, argues against the conclusion that these figures justify the view that lunacy is increasing. He states that in his district imbecile children are placed on the list of registered lunatics, and notes a greater tendency on the part of guardians to apply to the inspector in connexion with weak-minded children. In a similar manner he observes that there is less reluctance than was formerly the case to place elderly persons who have become "weak-minded" under asylum treatment. In this way the increased numbers on the lunacy roll are at least largely explained. Mr. Carswell allows that there has been a considerable increase in the number of patients suffering from general paralysis, but even here he declines to adopt pessimistic views, and expresses an opinion that the cause of the increase is a "temporary" one.

St. Andrew's Ambulance Association.

At the annual meeting of the members of this association, held in Glasgow on June 30th, it was decided, on the motion of Dr. George T. Beatson, to make application for incorporation by Royal charter, and a committee was appointed to carry this resolution into effect.

Proposed Memorial to William and John Hunter.

The movement so energetically promoted by the late Dr. Mather is now taking definite shape, and at a recent meeting in Glasgow, summoned by a circular signed by the Lord Provost, the Principal of the University, and the President of the Faculty of Physicians and Surgeons, an executive committee was appointed to collect subscriptions; it is hoped that from £3000 to £4000 may be raised. Dr. Oswald Fergus was appointed secretary to the executive committee. It was intimated that Mrs. Mather has a sum of £850 which she is willing to add to the fund now proposed to be raised.

July 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mercer's Hospital.

AT a meeting of the governors of this institution, held on July 6th, the following were elected physicians to the hospital:—Mr. E. Ledwich and Dr. J. Lumsden. The surgeons elected were as follows:—Dr. Montgomery Ward, Mr. J. D. McFeely, and Mr. Henry Moore. Dr. E. Stamer O'Grady, a member of the former surgical staff, entered a protest against the proceedings on the ground that "there was at present a sufficient surgical and medical staff in the hospital." The Rev. Dr. Tisdall also handed in a protest against the proceedings. It will be noticed that Dr. Montgomery Ward was the only member of the old staff who has been re-elected.

Vaccination in Belfast.

At the weekly meeting of the Belfast Board of Guardians, held on June 29th, a letter was read from the Local Government Board enclosing extracts from a report of their inspector, Dr. Clibborn, which pointed out that, taking Belfast and Castlereagh dispensary districts together, there were over 600 children who seemed to be unprotected by vaccination. A committee was appointed to inquire into the matter.

The Infectious Diseases Hospital, Belfast.

The public health committee of the Belfast Corporation have recommended that the Local Government Board be requested to give their sanction to the council's borrowing £20,000, being the amount estimated as being required for the erection of an infectious diseases hospital, containing between sixty and eighty beds, capable of extension as may be required from time to time, on the site already approved by the council at Purdysburn. This matter will come up on

July 15th at the Local Government Board inquiry to be held in Belfast on that date.

The Royal Victoria Hospital.

The sum (£100,000) aimed at as the amount required by the promoters for the building fund of the new Royal Victoria Hospital having been subscribed, it has been decided that any further sum will be placed to the credit of the endowment fund, and already a considerable amount has been acknowledged.

Belfast Asylum.

Dr. Merrick, the resident medical superintendent of the Belfast Asylum, has resigned his post. He has been a most capable and efficient administrator, and it is a source of great regret to his friends that his state of health obliges him to retire.

Sudden Death of a Cork Medical Man.

The members of the medical profession in Cork experienced a painful shock last Sunday on learning that Dr. Michael J. Murphy had died suddenly. Dr. Murphy was a man of splendid physique, only about thirty-three years of age, and, as far as his relatives and friends knew, had enjoyed excellent health. Last Saturday he discharged his professional duties with his usual energy. The following morning his sister, noticing that he had not come downstairs, entered his room, and, failing to arouse him, became alarmed. She at once sent for medical aid, and two medical men were promptly in attendance, but only to find that he had been dead for some hours. Dr. Murphy was an enthusiastic bicyclist, and it is believed he suffered from some latent form of heart disease, which became aggravated by over-exertion. He had a distinguished collegiate career, and graduated at the Royal University in the year 1886. Soon afterwards he was appointed resident physician to the Cork Union Hospital. He resigned that position in 1892, and was elected consulting sanitary officer to the Cork Union. During the past four years he was one of the physicians of the Mercy Hospital, and had established a reputation as a clinical teacher. Some few years ago he was unanimously elected honorary treasurer of the Cork Medical and Surgical Association, and his genial, unobtrusive manners made him a great favourite with his professional brethren.

Some Cases of Typhus Fever in Cork.

At a meeting of the public health committee of the Cork Corporation, the medical general superintendent of health reported an outbreak of typhus fever in a few tenement houses in the city; twelve of the inmates were attacked and were promptly removed to the Union Fever Hospital. The houses were disinfected, and other measures adopted to prevent the spread of the disease. Some twenty-five years ago the occurrence of typhus fever was tolerably common in the city, but, thanks to improved sanitary conditions and to the greater facilities for grappling with it at once, it has become a rare disease in Cork—so much so that many of our younger medical men have probably never seen a case.

July 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Resection of the Cervical Sympathetic.

Two cases of resection of the cervical sympathetic for exophthalmic goitre have just been published by two surgeons, and each operation has resulted in complete success. The first case was reported to the Academy of Medicine by M. Reclus, and the operation was performed by a young surgeon, M. Faure. The patient was a woman, aged twenty-one years, who developed exophthalmic goitre after her third pregnancy. She suffered from salivation, polyuria, crises of diarrhœa, marked tremblings, sensations of heat and cold, feebleness of the legs, very marked exophthalmos, and tachycardia. Electrical treatment brought about some amelioration of the symptoms, but soon all the phenomena reappeared. The eyelids failed to cover the eyes and corneal ulceration commenced; the thyroid was enormously hypertrophied, the apex beat so markedly as to raise the chest wall, the pulse-rate increased from 120 to 130, and her hair began to fall off. At length the presence of tuberculous masses in the neck and chest was clearly to be made out. M. Faure accordingly performed the following operation after the method laid down by M. Jaboulay, of Lyons. An incision twelve centimetres long was made on the right side of the neck just behind the sterno-mastoid muscle, the cervical branch of the spinal accessory was divided, and the superficial and deep cervical plexus came into view. The vascular and nervous structures lying in front of the vertebral column were separated and pulled forwards, and behind them the great sympathetic came into view. The superior cervical ganglion was picked up and the afferent branches as far as the middle ganglion removed. Then some seven centimetres of the great sympathetic were resected. A similar operation, but complicated by the removal of some tuberculous glands, was performed upon the left side. During the operation there was no change noticeable in the pulse or in the condition of the thyroid, but by the evening the pulse was less rapid and the patient slept. On the seventh day after the operation the exophthalmos was much less, and, the patient being able to close her eyes, the corneal ulcers began to heal. The circumference of the neck had diminished from 39 centimetres to 36; the pulse-rate had fallen to 90; and the tremors, the salivation, and the diarrhœa disappeared. The second case was reported to the Academy of Medicine at the next meeting by M. Gerard Marchant. The patient was a woman with a neurotic family history. In March, 1896, exophthalmos appeared after a pregnancy, in August thyroid hypertrophy commenced, and in January, 1897, tremors. The exophthalmos was extreme and the eyelids did not cover the eyeballs. The goitre was specially marked on the right side. The pulse-rate was 80 while the patient was at rest and became 100 on moving. The heart was normal, and at this time the tremors were well marked. M. Marchant then operated. An incision was made in the line of the sterno-mastoid muscle, the various vascular and nervous structures were lifted up, and the great sympathetic was found lying on the deep muscles of the neck. To make certain, the nerve was exposed as far as the superior cervical ganglion. Four centimetres of the nerve were then resected from above the superior ganglion to below the level of the middle ganglion, which is often absent. The nerve was cut on each side successively. The operator began on the left side, and a sub-conjunctival ecchymosis appeared in the right eye, due probably, as in the experiments of Dastre and Morat, to excitation of the central end of the nerve by the forceps. After the operation the pupils contracted, the eyeballs diminished, and the goitre disappeared by about the twelfth day. Later, some of the phenomena returned in a much less marked form, but still obvious. As M. Marchant says, there is still much to be learned.

X Rays in the Diagnosis of Thoracic Affections.

MM. Beclere, Oudin, and Barthelemy have recently shown at the Hospitals' Medical Society a series of most interesting x ray photographs, forming the best results hitherto obtained in France. The first two photographs were taken from the same patient, a man affected with a large pleural effusion on the left side, one print being obtained before and the other after thoracentesis. The difference between the opacity of the fluid and the transparency of the lung tissue after paracentesis was well shown. The photographs also show that in this patient, aged sixty-six years, the thoracic aorta at its junction with the arch is somewhat dilated and bulges towards the left of the vertebral column just at the level of the fifth dorsal vertebra, a condition observed before by radioscopy to be more or less pronounced in those subjects whose peripheral arteries are hardened and tortuous. Another print showed the thorax of a child suffering from a tuberculous affection of the tracheal and bronchial glands, and made it evident that besides the retro-sternal mass, which is alone capable of diagnosis by the ordinary means, there existed, also deep in the substance of the two lungs around the roots, numerous other masses, and that on the right side they extended along the various ramifications of the bronchi. In another case, that of a patient with pyo-pneumothorax, the level of the effusion was plainly seen as well as the shrunken lung, and the bodies of the vertebræ, together with an apical adhesion. The left lung, which appeared sound to auscultation, showed by the x rays a multitude of opaque patches due doubtless to scattered masses of tubercle. In another case, that of a young girl whose chest had been carefully examined by

M. Rendu, and in whom only very indefinite results had been obtained, the x ray photograph showed a dark patch at the apex of the lung and another at about the middle.

Quackery at Angers.

The tribunal of Angers have just decided that a man named Mouroux, who set up as a magnetiser, cannot be proceeded against under the law to restrain unqualified medical practice. The Syndicate of Medical Men at Angers have accordingly appealed against this judgment.

The Manufacture of Theses.

A political journal has just started an active campaign on the subject of theses for the degree of doctor of medicine, which some students buy all ready written from their companions. Latterly this occupation has become a real industry, and a library has had the impertinence to send round among the students a regular prospectus, which runs as follows: "This house will supply manuscripts for a thesis to any candidate who will apply for one." The editor of the journal in question having read this went to the library as a student and commenced negotiations for the purchase of a thesis. He was offered an excellent ordinary thesis "for 200 francs; for one still better 500 francs was asked; and for one of the very first class," about which everyone will talk, 1000 francs. The journalist asked for a very ordinary and short thesis and obtained a decrease in price of 150 francs. The story, which is probably exaggerated, has greatly excited the lay public, and has given an additional argument to those who are agitating for doing away with the thesis altogether. As a matter of fact, however, the only new features are the effrontery of the library and its prospectus. There are always some theses written by needy and clever young men for medical men who have to get through their studies quickly so as to return to the district where they mean to practise; and, in addition, foreign medical men often find it impossible to write a long medical treatise in really good French, and often have to get the help of the residents at the hospitals, who are always willing to make a little money in this way. As a fact, these theses are very often better than those which the candidate has written himself, and which the Faculty has nevertheless accepted.

July 5th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Brazilian Government and the Bacillus of Yellow Fever.

NATURALLY enough Dr. Sanarelli's discovery of the bacillus icteroides awakens the keenest interest in the South American communities, where, according to Dr. Jacopo Mantegazza (in a letter to a Tuscan contemporary written just after his return last week from Rio Janeiro), a concurrent series of investigations by the Brazilian Dr. Felipe Caldas goes far to confirm the findings of the Sienese pathologist. With a view, it would appear, to a final judgment on these findings, a Bill just brought before the Brazilian Legislature and now agitating the Chamber of Deputies at Rio, "offers a prize of 400 contas de Reis (£44,000), divided into two equal parts, first to the author of a work demonstrating the existence of the bacillus icteroides and the surest and readiest means of its bacteriological diagnosis; second, to the discoverer of the effective clinical treatment of the bacillus so ascertained, and of the best prophylactic mode of dealing with it. The court of adjudication by which the prizes are to be awarded shall consist of the Medical Institute of Rio Janeiro, the Koch Institute at Berlin, and the Pasteur Institute at Paris. Another provision of the Bill authorises the Government to reserve the sum of 200 contas de Reis for the founding of an establishment for the preparation of the serum destined to antagonise the bacillus of yellow fever, and conceding to the discoverer of the serum in question the organisation of the serotherapeutic institute established *ad hoc*. Dr. Mantegazza concludes his letter with the remark that in Brazil the award of the prize (or rather prizes) to Dr. Sanarelli is considered a foregone conclusion. All the same, the action of the Brazilian Government in making its legislative recognition of the "bacillus icteroides" contingent on the confirmatory verdict of its own highest professional tribunal, sustained by the Koch and Pasteur Institutes, is both reasonable and right.

Another "Incredible Scandal."

In THE LANCET of June 12th I drew attention to the maladministration of the Foundling Hospital at Naples, by which, in two years, out of 856 admitted only three of the little inmates survived, and I remarked that the Neapolitan institution was but a specimen—"though an exceptionally ghastly one"—of the many establishments of the kind in the great cities. Now Venetia, as the result of recent inquiries, claims the second place after Naples for its "slaughter of the innocents." A Paduan correspondent says: "The eight provinces making up the Venetian territory (Verona, Vicenza, Belluno, Udine, Venice, Rovigo, and Treviso), occupying a superficies of 24,000 square kilomètres, and having a population of nearly three million inhabitants, send annually to their respective 'Brefotrofi' (foundling hospitals) a mean of 140,000 infants, the vast majority (it need hardly be said) illegitimate. The mortality among them is 52 per cent.—rather more than half—the cause of this frightful death-rate being, primarily, want of sufficient nourishment, and, secondly, neglect of every description. To attain this result, the hospitals in question spend every year 15,000,000 francs derived from the bequests of benefactors and the contributions of the provinces and communes." Padua is prominent for the death-rate of the infants in her "Brefotrofio," and what wonder when in that establishment one wet-nurse is expected to give the breast to two, and even three, babes per diem? In Naples, it will be remembered, the same wet nurse suckled from three to four a day.

The Boycotting of British and American Practitioners.

In the Chamber of Deputies on the 3rd inst. Dr. Santini, promoter of the Bill to exclude English-speaking medical men from practising in Italy, asked what were the intentions of Government as to Article 23 of the "Legge Sanitaria" which he proposes to modify in the above sense. Signor Serena, on behalf of the Government, replied that medical practitioners of non-Italian nationality would be allowed to practise among Italians in Italy if Italian medical men had the same privilege conceded them by the other nationalities in question. Signor Serena added that Article 23 of the "Legge Sanitaria," still in force, allowed foreign medical men to practise among their compatriots resident in Italy if they did not extend their *clientèle* to Italians. The abuse of this privilege (he said) the Government had hitherto guarded against, and would, he added, continue to guard against, with increased vigilance. This did not satisfy Dr. Santini, whose object is to confine English-speaking practice in Italy to Italian practitioners, and to make it as impossible for British or American medical men to pursue their profession among compatriots in the kingdom as it is now in Switzerland and France. Manifestly, this was more than the Government, represented by Signor Serena, were prepared to grant. As THE LANCET has pointed out, the presence of the English-speaking colony in Italy is (to Italy) so pecuniarily important that any legislation calculated to deter or even diminish it would on Italy's part be distinctly suicidal; and the legislation sought by Dr. Santini partakes of that character.

July 4th.

THE LIFE SAVING SOCIETY: A SUCCESSFUL FETE.—During the six years of its existence the Life Saving Society has organised no such important gathering as that of the "Diamond Jubilee International Gala," which took place at the West India Docks on Saturday afternoon last. The gala had been timed to commence at 3 o'clock, but long before that hour spectators began to occupy every coign of vantage from which a view of the proceedings, however limited, was obtainable. The dock was gaily decked with flags, and a most enthusiastic welcome was given to H.R.H. the Duke of York, the President of the society, who arrived punctually at the appointed hour of 3 o'clock, accompanied by the Duchess. The programme was then gone through without a hitch. The most important event, the mile amateur championship, was secured by J. A. Jarvis, of Leicester, who is reported to have raced untrained, but the diving exhibition of the Swedish representatives was the most popular item on the card. The Hon. Sydney Holland presided over the festival dinner of the society which followed at the Holborn Restaurant.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations, have been admitted Licentiates in Dental Surgery:—

Ackland, Donald, Charing-cross and the Dental Hospital of London.
Arnold, John Cressey, London Hospital and the National Dental Hospital.
Austen, Harold William Colmer, M.R.C.S. Eng., St. Bartholomew's and the Dental Hospital of London.
Bell, Robert John, Charing-cross and the Dental Hospital of London.
Brown, Charles Every, Guy's Hospital.
Brown, Ernest Chodwick, Guy's Hospital.
Brown, James Warburton, Charing-cross and the Dental Hospital of London.
Canton, Loftus Henry, Middlesex and the National Dental Hospital.
Coates, Frederick Arthur, University College.
Cook, Percy Herbert, Guy's Hospital.
Cooper, Albert, Guy's Hospital.
Cooper, Percy Henry Rogers, Charing-cross and the Dental Hospital of London.
Douglas, James Carfrae, Charing-cross and the Dental Hospital of London.
Duncan, Frank Hubert, Charing-cross and the Dental Hospital of London.
Everett, Charles, Middlesex and the National Dental Hospital.
Floyd, Walter, Guy's Hospital.
Forsyth, William Frederic, Charing-cross and the Dental Hospital of London.
Harrison, Sydney, Guy's Hospital.
Heath, Arthur Reginald, Charing-cross and the Dental Hospital of London.
Hey, Stephen Daniel, Charing-cross and the Dental Hospital of London.
Holmes, Robert Gabriel Stuart, Guy's Hospital.
Jacobs, Jacob Michael Cecil, Guy's Hospital.
Jones, William Henry, Middlesex and the Dental Hospital of London.
Lees, Charlie, Charing-cross and the Dental Hospital of London.
Lishman, James, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester.
North, Benjamin, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester.
Oddy, Alfred Ernest, Guy's Hospital.
Picnot, Ernest, Guy's Hospital.
Poundall, Alfred Ben, Middlesex and the National Dental Hospital.
Powell, Matthew Pearce, Charing-cross and the Dental Hospital of London.
Reading, George Frederick, Charing-cross and the Dental Hospital of London.
Robertson, Arthur Edwin, St. Bartholomew's and the National Dental Hospital.
Robinson, Robert Percy, University College, Royal Infirmary, and the Dental Hospital, Liverpool.
Rogers, David de Sola Cohen, Charing-cross and the Dental Hospital of London.
Roper, John Langdon, Middlesex and the Dental Hospital of London.
Rowe, William Francis, Charing-cross and the Dental Hospital of London.
Sadler, Bernard Frederick, Mason College, Queen's and General Hospitals, and the Dental Hospital, Birmingham.
Shedden, Arnold Ward, Mason College, Queen's and General Hospitals, and the Dental Hospital, Birmingham.
Smart, Edwin Herbert Jacob, Charing-cross and the Dental Hospital of London.
Smith, Edward Percy, Charing Cross and the Dental Hospital of London.
Smith, Edwin Wylde, Guy's Hospital.
Smith, Thomas William, Charing-cross and the Dental Hospital of London.
Stoner, John Walton, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester.
Styer, Albert St. John, Guy's Hospital.
Summers, Gilbert Hamilton, Charing-cross and the Dental Hospital of London.
Thew, Thomas Wilton, Middlesex and the Dental Hospital of London.
Tidswell, Oswald, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester.
Wallis, Charles Edward, M.R.C.S. Eng., King's College and the Dental Hospital of London.
Wallis, Elton George Whisbaw, Guy's Hospital.
Westron, Henry, Charing Cross and the Dental Hospital of London.
Williams, Sidney Herbert, Charing-cross and the Dental Hospital of London.
Willis, Stuart, Mason College, Queen's and General Hospitals, and the Dental Hospital, Birmingham.
Wilson, Charles Albert, Guy's Hospital.
Wilson, George Edward, Charing-cross and the Dental Hospital of London.
Woodhouse, William Barnabas, M.R.C.S. Eng., Middlesex and the Dental Hospital of London.

Fourteen gentlemen were referred back to their professional studies for six months.

The following gentlemen, having previously passed the necessary examinations and having now conformed to the by-laws and regulations, have been admitted Members of the College:—

Dantes, Augustus Paul, L.M. & S. Bombay, Grant Medical College, Bombay, and Charing-cross Hospital.
Gandier, Augustine, M.D., C.M. Kingston, Queen's University, Kingston, Canada, and Middlesex Hospital.

ROYAL INSTITUTION.—At the general monthly meeting of the members of the Royal Institution, held on Monday, July 5th, Sir James Crichton Browne, M.D., F.R.S., treasurer and vice-president, presiding, the special thanks of the members were given to Sir Andrew Noble for his donation of £100 to the Fund for the Promotion of Experimental Research at Low Temperatures.

THE PROPOSED CONVALESCENT HOME FOR BRISTOL.—The progress of the fund for providing a convalescent home for Bristol has not been quite equal to the anticipations of the proposers of this scheme. According to the list published on June 26th, the unconditional subscriptions are under £18,000; £50,000 is the sum required. There are also conditional promises of £7446; £20,000 has been raised for an endowment fund conditional upon the sum of £50,000 being first raised.

PRESENTATIONS TO MEDICAL MEN.—Mr. F. E. Haydon, M.B. Glasg., L.R.C.P., L.R.C.S. Edin., of Littlehampton, has been presented by the local ambulance class with the two volumes of Nansen's book, "Farthest North," and also a silver-mounted umbrella, in appreciation of his services as honorary lecturer to the class.—Mr. R. A. Prichard, M.R.C.S. Eng., L.R.C.P. Edin., of Conway, has been the recipient, from the Conway ambulance classes, of an honorary Life Certificate, in recognition of his instructive lectures on First Aid.

MR. LEWIS A. TALLERMAN has presented the North-West London Hospital with a Tallerman-Sheffield apparatus for the localised application of super-heated dry air. We understand that this present was made in response to a request from the secretary of the North-West London Hospital to be allowed the free use of the apparatus under hire at the hospital at the time as a Jubilee donation, and that Mr. Tallerman is willing to extend the same generosity to five other hospitals if applications are made to him at 50, Welbeck-street, Cavendish-square, W.

THE POPLAR HOSPITAL FOR ACCIDENTS.—The annual dinner of the supporters and friends of this charity was held for the forty-second time on June 29th at the Holborn Restaurant. Mr. Thomas Catling was in the chair. The chairman, in proposing the toast of the evening, "Success to the Poplar Hospital," referred to the good work which the hospital had carried on during the forty-two years of its existence. The Hon. Sydney Holland, the energetic former secretary, who responded to the toast, said that in the six years previous to 1890 they received from the public £23,000, but in the six years ending 1895 they had received no less a sum than £60,000. Subscriptions amounting to £1650 were announced.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held on June 30th, Dr. J. F. Payne, President, being in the chair.—Several interesting cases were brought forward by Dr. Abraham, Dr. Savill, and others.—A case of Multiple Lupus in a little girl, six years of age, shown by Dr. Abraham, excited much comment. There were a dozen or more isolated tuberculous-looking nodules about the size of a pea, or a little larger. There were a few scattered nodules about the body generally and the limbs. Slight enlargement of the lymphatics, of the axillæ, and of other regions was noticed.—Dr. Payne considered the possibility of the lesions being those of congenital syphilis. The child had a swelling of one of the finger joints, (?) "strumous dactylitis." The mother gave a history of several miscarriages.—Dr. Abraham promised to examine the growths. The nodules had existed in their present condition for about a year, and it was stated by the mother that they all "came out at once."—Dr. Ryan showed a case of X Rays Dermatitis; the skin of the shoulder and bosom was affected; exposure forty-five minutes. The photograph had not been successful. Hair was still growing over part of the affected region.—Mr. Pernet stated that he knew of a hairy mole which had been subjected to an exposure of two hours without destruction of the hair follicles having taken place.

MEDICAL MAGISTRATE.—His Excellency the Governor of New South Wales has appointed Mr. Thomas Arthur Grieves, L.R C P. Lond., M.R.C.S. Eng., of Wyalong, New South Wales, a magistrate for that colony.

MR. RUDYARD KIPLING'S "Our Lady of the Snows" and "Hymn before Action" have been set to music, and will be sung by special permission for the first time at the musical conversazione arranged by Miss Janotha to-day (Saturday), "Queen's Day," in the National Hospital for the Paralysed and Epileptic, Albany Memorial, Queen-square, Bloomsbury.

THE DWELLINGS OF THE POOR.—The report of the Mansion House Council for the year ending Dec. 31st, 1896, states that in presenting its thirteenth annual record of work done to further the interests of sanitation in London and the suburbs the council feel that there is even a stronger necessity than in the past for keeping a steady watch upon the work of the local authorities, upon whom is devolved the serious responsibility of making and keeping their various districts in sound sanitary condition. During the past twelve months 10,684 inspections dealing with 7545 houses in all parts of London have been made. Of these the defects have been remedied in 3624 cases, while 2108 are still under consideration, and 1813 have been dismissed.

THE NATIONAL ASSOCIATION OF MASTER PLUMBERS.—The annual meeting of the London branch of the above association was held on June 29th, followed by a dinner at the Holborn Restaurant. Though the matters discussed were devoid of any general interest, yet such associations must have a very pronounced influence for good, if an indirect one, upon the sanitary condition of the community. It is understood that this association does not exist simply for the purpose of benefiting the masters alone, but extends its operations to the improvement of the status of the trade as a whole. One object is to establish boards of conciliation, composed jointly of masters and operatives, in order to promote a better general understanding, and arrive at an amicable settlement in any matter of dispute.

EAST SUFFOLK AND IPSWICH HOSPITAL.—The anniversary Court of Governors of this institution was held at the town-hall on Wednesday, June 30th, when the chair was occupied by the Mayor. A most satisfactory report was unanimously agreed to. It was shown that the work of the hospital had considerably increased, the number of in-patients being augmented by 48 and the out-patients by 1191. The expenses, however, had been reduced. Considerable discussion took place on a resolution proposed by the Mayor to the effect that it is desirable that the secretary should devote his whole time and attention exclusively to the affairs of the hospital, and that he should reside within the hospital, unless specially exempted from so doing by the committee of management. Eventually it was decided that the board of management should consider and report upon the matter.

DIPHTHERIA IN LONDON.—In the four-weekly period ended with June 19th the notified cases of diphtheria in London were much in excess of the total of the preceding like period ended on May 22nd. In the May period the total was 777, yielding a weekly average of 194, all the sanitary districts except two being invaded. In the June period the like number of sanitary areas were invaded, but the total of notifications reached 895, a number which yields a weekly average of 224. In May only one district had upwards of 50 cases notified; in June two districts were so circumstanced, with an aggregate of 141 notifications. Other five districts in June had only 17 notified cases in all. In the May period the registered deaths from the disease in London numbered 142, a weekly average of 35, with a resulting per case mortality on notifications of 18·3 per cent. In the June period the deaths fell to 137, or 34 weekly; and in the circumstance of an increased amount of disease the per case mortality rate fell to 14·1 per cent. Thus, whilst in the June period the quantity of diphtheria prevalent was in excess of the four preceding weeks, the nature of the malady, as judged by the mortality data for the corresponding weeks, was milder. Compared with the June period of 1896, the current year's data show favourably. In 1896 the cases amounted to 1060, or 265 weekly; the deaths to 196, or 49 weekly; and the per case mortality rate was 18·5 per cent. In the two weeks of the current year completed since June 19th the deaths from diphtheria in London have been 24 and 32 respectively. The latter total during last week was 3 below the corrected decennial average for the twenty-sixth week of the years 1887–96. Three deaths belonged to each of the following sanitary areas:—Battersea, Camberwell, Chelsea, and Lambeth. Two of the 32 deaths were of persons aged upwards of 20 years, and 3 were of infants. Last Saturday found 869 diphtheria patients still under treatment, the admissions during the week having been 152. In the outer ring, only 5 deaths were registered from diphtheria last week, namely, one in Chiselhurst, Chiswick, Barnet, Hornsey, and Enfield districts respectively.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, JULY 1ST.

Classification in County Asylums.

MR. WEIR asked the President of the Local Government Board whether it was the practice within the metropolitan area to classify as paupers patients who were under treatment in county asylums, notwithstanding the fact that the cost of maintenance was provided by the relatives or friends of the patients; and, if so, whether it was proposed to take any steps to amend the present system of classification.—Mr. Chaplin replied that he was informed that all patients in county asylums were classed as paupers whose maintenance was paid for by the guardians, although it might be that in some cases the guardians were partially recouped by sums received from relatives. He had no information which would lead him to think that a grievance existed, but he would make further inquiry.

Ventilation of the Metropolitan Underground Railways.

Mr. Ritchie, in reply to Mr. Weir, said that the Committee on the Ventilation of the Tunnels of the Metropolitan and Metropolitan District Railways hoped to conclude the taking of evidence on July 6th. They had arranged to visit the Severn Tunnel to inspect the ventilating arrangements on July 12th, and the report would be made as soon as possible after that date.

Poona Plague Administration.

Lord George Hamilton answering questions on this subject said that the measures taken at Poona to prevent the spread of the plague had been attended by a remarkable amount of success, the deaths from plague having fallen from 177 per week to 7 per week within the last two months. While that was so they had been the subject of much misrepresentation and exaggeration in a portion of the vernacular press. He was confident that the Governor of Bombay had been and was most careful to confine the action of the authorities to what was absolutely necessary for checking the plague, and to show all possible consideration to the religious opinions and customs of the inhabitants. He had no reason to think, as at present advised, that any inquiry into the administration of Poona during the plague was necessary or desirable.

Indian Famine Statistics.

Lord George Hamilton said, in reply to a question, that the Indian Government had reason to believe that deaths were frequently reported as due to starvation when they were really due to other causes, and had in consequence issued orders to prevent the famine statistics from being vitiated by inaccuracies of this kind.

FRIDAY, JULY 2ND.

Viewing the Body at Inquests.

Mr. Yoxall asked the Secretary of State for the Home Department if his attention had been drawn to the fact that jurymen at coroners' inquests often took grave objection to the statutory task, always unpleasant, and frequently repulsive or dangerous, of viewing the body, and if he would consider the subject in order to devise some alternative method, leaving the coroner or jury to decide in difficult cases whether such viewing was necessary, and abolishing such viewing in ordinary and well-attested cases where the medical evidence was conclusive.—Sir Matthew White Ridley said, in reply: Yes, objection is taken occasionally, I believe, to the performance of this duty, and the question of relaxing the requirement was some years ago under the consideration of this House. I am afraid there is no prospect of my being able to deal with the matter at present, even if it should appear on consideration to be desirable to do so, but I will look into it and ascertain from the coroners what views are held by them upon the subject.

MONDAY, JULY 5TH.

Cattle Disease.

Sir Arthur Forwood asked the President of the Board of Agriculture whether British steamers which call at Havre to receive cargo on their outward voyage for America were precluded from conveying from America to England live cattle for slaughter on landing unless a period of twenty-one days had elapsed between the time of call at the French port and their arrival at the English port, on the ground that infection from the cargo received in France but landed in America might be conveyed to the beasts subsequently received on the vessel in America and landed in England; and whether, as there was no restriction on the direct importation and distribution of merchandise from France into England, he would reconsider the regulations of the Board as regards vessels.—Mr. Walter Long replied that the landing of foreign animals had for very many years past been subject to the requirement that the vessel in which they were brought should not before taking them on board have touched within a specified period at a port in a country from which the importation of animals was entirely prohibited. This requirement was rendered necessary by the fact that some of the diseases against which this country legislated could be transmitted,

not only directly from animal to animal, but also through the medium of persons, substances, and things, and actual experience had shown that the danger was a very real one. He regretted, therefore, that he was unable to withdraw the requirement, and with regard to the particular period to be prescribed, he would say that some years ago it was reduced from twenty-eight to twenty-one days, and that he did not think it could be further reduced consistently with safety.

Poona Plague Administration.

Lord George Hamilton read to the House at this sitting a categorical reply by Lord Sandhurst, Governor of Bombay, to certain allegations with reference to the plague administration in Poona contained in a memorial addressed to the Bombay Government. This reply stated, among other things, that people were only sent to hospital after careful medical examination and if showing symptoms indicative of possible plague; that the greatest care was taken not to remove to the segregation camp any but those necessary to keep under observation, time being allowed for preparation and one person being allowed to stay behind to look after property; that Lord Sandhurst had not yet heard any allegations of indignity being substantiated; that native gentlemen were asked to accompany search parties, and did so to the very end; and that they were specially desired to bring to notice all complaints which reached them, and to mark down any offending soldier and report to officers that the search parties were instructed to have regard to religious feelings, and that the possibility of abuse of those feelings was minimised by the presence of the native gentlemen, and that Lord Sandhurst did not believe the possibility of indignity to native women owing to the presence of lady doctors and other ladies with the search parties.

BOOKS, ETC., RECEIVED.

APPLETON, D. AND CO., New York.
The Menopause. By A. F. Currier, A.B., M.D., New York City. 1897.

BAILLIÈRE, J. B., ET FILS, Paris.
Traité de Médecine et de Thérapeutique. Par P. Brouardel et A. Gilbert. Tome quatrième. 1897.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Outlines of Veterinary Anatomy. Part I.: The Anterior and Posterior Limbs. By C. C. Bradley, R.C.V.S. 1896. Price 10s. 6d.
The Analysis of Food and Drugs. Part I.: Milk and Milk Products. By T. H. Pearmain and C. G. Moor, M.A. Cantab. 1897. Price 5s.
The History and Technique of the Vaginal Radical Operation. By Drs. L. and T. Landau. English translation by B. L. Eastman, M.D., and A. E. Giles, M.D. 1897. Price 7s. 6d.

CHURCHILL, J. & A., Great Marlborough-street, London.
The Westminster Hospital Reports. Edited by R. G. Hebb. Vol. X. 1897.
Recent Materia Medica and Drugs occasionally Prescribed. By F. Harwood Lescher, F.C.S. Fifth Edition. 1897.

CLAY, W. F., Tevlot-place, Edinburgh.
The Cæcal Folds and Fossæ, and the Topographical Anatomy of the Vermiform Appendix. By R. J. A. Berry, M.D. 1897. Price 6s. net.

KARGER, S., Berlin.
Mittheilungen aus der Gynäkologischen Klinik des Prof. C. Engstrom. Band 1. Heft 1. 1897.
Cystitis und Urininfektion. Von Dr. Max Melchior. 1897.
Die Geschichtliche Entwickelung der sogenannten Hippokratischen Medicin im Lichte der neuesten Forschung. Von Dr. Franz Spaet. 1897.

LEHMAN, J. F., Munchen.
Atlas und Grundriss der Ophthalmoscopie und Ophthalmoscopischen Diagnostik. Von Prof. Dr. O. Haab. 1897.

MACMILLAN AND CO., London.
Lectures on the Action of Medicines. By T. Lauder Brunton. M.D., D.Sc. Edin. 1897. Price 10s. 6d. net.

MASSON ET CIE, Paris.
Archives de Physiologie. No. 3. Juillet, 1897.

SAMPSON LOW, MARSTON, AND CO., Fetter-lane, Fleet-street, London.
Twentieth Century Practice. Edited by T. L. Stedman, M.D. Vol. IX. Diseases of the Digestive Organs. 1897.

SMITH, ELDER, AND CO., Waterloo-place, London.
Dictionary of National Biography. Edited by S. Lee. Vol. LI Scoffin—Sheares. 1897.

SOCIÉTÉ D'EDITIONS SCIENTIFIQUES, Paris.
De l'Intervention Chirurgicale dans le cours et les suites de l'Ulcère Simple de l'Estomac. Par G. Marion. 1897.
Contribution au Traitement des Fractures du Maxillaire Inferior. Par Dr. Camile Leblanc. 1897.
Physiologie et Pathologie de la Respiration Nasale. Par Dr. Henri Mendel. 1897.
Le Traitement de l'Inflammation Cérébrale Aigue. Par Dr. A. Luyten.

THE REBMAN PUBLISHING COMPANY, Adam-street, Strand, London.
Archives of Skiagraphy. Edited by S. Rowland, B.A. Camb. No. 4, Vol. 1. April, 1897.

THE SCIENTIFIC PRESS, Southampton-street, Strand, London.
Burdett's Hospitals and Charities. 1897. Price 5s.

WRIGHT, JOHN AND CO., Bristol.
The Pocket Therapist: A Concise Manual of Modern Treatment. By T. S. Dowse, M.D. 1897. Price 5s. net.

Inter-colonial Medical Congress of Australia: Transactions of the Fourth Session, held in Dunedin, New Zealand, February, 1896 (the Otago Daily Times and Witness Newspapers Company, Dunedin, 1897).—The Science of Speech: by Alex. M. Bell (The Volta Bureau, Washington, 1897).—Ergänzung zu die Farbenblindheit und ihre Diagnose: von Dr. M. Ohlemann; 1897 (Joh. H. Meyer, Braunschweig. 1897).—The Spas of Wales: their Medicinal and Curative Properties: by T. R. Roberts (John Hogg, Paternoster-row, London); price 1s.—Magazines, &c., for July: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Sunday Hours, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, and Humanitarian.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

ADAMS, ALEX. S., M.B., C.M. Aberd., has been appointed Medical Officer for the Rillington Sanitary District of the Norton Out-relief Union.

BEATTIE, ROBERT, M.D., M.Ch. Irel., M.R.C.S., has been re-appointed Medical Officer of Health by the Soothill Upper Urban District Council.

BROWNE, ADA M., L.S.A. Lond., has been appointed Assistant Anæsthetist to the New Hospital for Women, Euston-road, London.

BURNETT, JOHN R., M.D., M.R.C.S., has been appointed Medical Officer of Health for the Urban District of Keswick, vice C. Gore Ring, deceased.

BYFORD, W. F., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Workhouse of the Nottingham Parish.

COLEMAN, J. G. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Sutton Bridge Urban Sanitary District.

DICK, ARCHIBALD S., M.B., C.M. Glasg., has been appointed House Physician to East London Hospital for Children, Shadwell, E.

DICKSON, J. D., M.D., M.Ch. Irel., L.R.C.S. Irel., has been appointed Medical Officer of Health for the Marlow Urban Sanitary District.

DINGWALL, ARCHD., M.B., C.M. Aberd., has been appointed Medical Officer of Health by the Prestleign Urban District Council.

DYER, C. H., M.B., C.M. Aberd., has been re-appointed Medical Officer of Health by the Cleckheaton Urban District Council.

FISHER, J. A., L.R.C.P. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Garston Urban District Council.

FREMLIN, H. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer by the Tiverton Rural District Council.

GARDNER, H. BELLAMY, L.R.C.P. Lond., M.R.C.S., has been appointed Anæsthetist to the Male Lock Hospital, Dean-street, Soho.

GIBBES, C. C., M.D., M.R.C.P., D.Ph. Camb., has been appointed Assistant Physician to the National Hospital for Diseases of the Heart and Paralysis, Soho-square, W.

GIBB, W. ALEXANDER, M.B., M.S. Edin., has been appointed House Surgeon to the Isle of Man General Hospital, Douglas.

HARRIS, F. D., M.B., Lond., L.R.C.P., M.R.C.S., D.P.H. Lond., has been appointed Medical Officer of Health and Public Analyst for St. Helens, Lancs.

HARRISSON, J. W., M.B., C.M. Aberd., has been re-appointed Medical Officer of Health by the Sandwich Town Council.

HILLS, W. E., L.R.C.P. Lond., M.R.C.S., has been appointed a House-Physician to Guy's Hospital, London.

KAUFFMANN, C. J., M.D. Lond., M.R.C.P., M.R.C.S., has been appointed an Honorary Physician to the Queen's Hospital, Birmingham, vice C. W. Suckling, resigned.

LOYND, WM., L.R.C.P. Irel., M.R.C.S., has been re-appointed Medical Officer of Health for the Oswaldtwistle Sanitary District of the Blackburn Union.

MARSHALL, J. R., M.B., C.M. Glasg., has been appointed Medical Officer of Health by the Carriden Urban District Council.

MORTON, CHAS. A., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Joint Professor of Surgery in the Faculty of Medicine, University College, Bristol.

NICOLL, GEO., M.B., C.M. Glasg., has been appointed Medical Officer of Health by the Clyne Parish Council.

ORFORD, R. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health to Market Bosworth District Council, vice J. A. Turner, resigned.

RICHARDS, H. M., M.D. Lond., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health by the Chesterfield Town Council.

SHILLITOE, ARTHUR, M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the London Lock Hospital, vice Jonathan Hutchinson, jun., resigned.

SNELL, E. H., M.D. Lond., L.R.C.P., M.R.C.S., D.P.H. Camb., has been appointed Medical Officer for the Borough of Coventry.

STILES, A. J., M.D. Edin., M.R.C.S. Eng., has been appointed Medical Officer for the Spalding West District of the Spalding Union.

STOKES, RONALD M., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Monmouth District of the Monmouth Union, vice Brandram Jones, resigned.

SYDENHAM, FREDK. W., M.B., C.M. Edin., D.S.Sc. Vict., has been appointed Honorary Physician to the Walsall and District Hospital.

SWAIN, JAMES, M.S., M.D. Lond., F.R.C.S. Eng., has been appointed Joint Professor of Surgery in University College, Bristol.

WELLS, JAMES, M.R.C.S., L.S.A., has been appointed Medical Officer and District Vaccinator for the Lacock District of the Chippenham Union, vice J. H. Crisp, resigned.

WOODHOUSE, W. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer by the Wantage Rural District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

BOROUGH OF SHREWSBURY.—Medical Officer of Health. Salary £200 per annum. Applications to the Town Clerk, Guildhall, Shrewsbury.

BRADFORD EYE AND EAR HOSPITAL.—Vacancy on the Honorary Medical Staff.

CHORLTON UNION.—Junior Resident Medical Officer at the Workhouse Hospitals, Withington, Manchester, for twelve months. Salary £120 per annum, with furnished apartments and attendance (but not rations) in the workhouse. Applications to the Clerk to the Guardians, Chorlton Union Offices, All Saints, Manchester.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant. Tenable for three months, on payment of a fee of £5 5s.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of the House Surgeon £100 per annum, with furnished apartments, board, and washing. That of the Assistant House Surgeon £50 per annum, with furnished apartments, board, and washing.

GARTLOCH ASYLUM AND HOSPITAL FOR MENTAL DISEASES, Glasgow.—Assistant Medical Officer. Salary £150 a year, with all found.

GENERAL HOSPITAL, Nottingham.—Assistant House Physician for six months. Board, lodging, and washing in the hospital, and an honorarium of £10 10s. will be given conditionally.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Board, residence, and washing provided.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Senior House Surgeon for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the hospital. Also Junior House Surgeon for six months. Board, lodging, and washing in the hospital.

GRIMSBY AND DISTRICT HOSPITAL, Grimsby.—Resident House Surgeon. Salary £80 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months, unmarried. Salary £20, with board and residence in the hospital.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon for one year. Salary £40, with board and lodging.

KENSINGTON UNION.—Second Assistant Resident Medical Officer for the Workhouse and Infirmary. Salary £80 per annum, with apartments, board, and washing, subject to the statutory deduction under the Poor-law Officers Superannuation Act, 1896.

LONDON HOSPITAL MEDICAL COLLEGE, Turner-street, Mile-end, E.—Bacteriologist to the Hospital, and Lecturer on Bacteriology and Pathological Chemistry.

LONDON LOCK HOSPITAL, 91, Dean-street, Soho.—Registrar. Applications to the Secretary, Harrow-road, W.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 for the first year, with board and residence. Also Junior House Surgeon. Salary £70 per annum, with board and residence at the institution.

MEMORIAL HOSPITAL, Jarrow-on-Tyne.—House Surgeon. Salary £80, rising £10 annually to £100. Board and residence provided in the hospital. Applications to Mr. J. Campbell, Surgeon, Ivy Bank, Jarrow-on-Tyne.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Surgeon. Also Surgeon.

NATIONAL DENTAL HOSPITAL, Great Portland-street, London.—Anæsthetist.

NORTH WALES ASYLUM, Denbigh.—Second Assistant Medical Officer. Salary £100, with board, washing, and apartments. No beer allowance, and no pension given. Applications to the Clerk to the Visitors, Denbigh.

RIPON DISPENSARY AND COTTAGE HOSPITAL.—Resident House Surgeon and Dispenser, unmarried. Salary £70 per annum, with board and lodging.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £30 per annum; board, lodging, and washing provided.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiners.

ROYAL HALIFAX INFIRMARY.—House Surgeon, unmarried. Salary £80 per annum, advancing £10 per year up to £100, with residence, board and washing.

ROYAL INFIRMARY, Aberdeen.—Medical Superintendent. Salary £350 per annum, without residence.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Assistant Lecturer on Chemistry and Physics. Salary £100, rising to £125.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road, London.—Resident Medical Officer. Salary £105, with residence and attendance. Applications to the Hon. Sec., Mr. H. P. Bodkin, 23, Gordon-street, Gordon-square, W.C.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House Surgeon for two years. Salary £100 per annum, with board, lodging, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Surgeon, for six months. Board, lodging, and washing provided.

Births, Marriages, and Deaths.

BIRTHS.

BRODIE.—On June 29th, at Lindfield, Uxbridge-road, Surbiton, the wife of Dr. T. G Brodie of a son.

BUCK.—On July 1st, at Beswick House, Beswick, Manchester, the wife of Walter Buck, L.R.C.P., L.R.C.S., of a daughter.

CARRUTHERS.—On July 3rd, at Central-hill, Norwood, the wife of S. W. Carruthers, M.B., C.M., of a son.

CARVELL.—On June 30th, at the residence of her mother, Leicester-Villa, Burgess-hill, the wife of J. Maclean Carvell, M.R.C.S., of a daughter.

DOWN.—On July 4th, at 14, Mount Edgcumbe-terrace, Stoke, Devonport, the wife of Elgar Down, M.R.C.S., of a daughter.

DRURY.—On June 30th, at Landon House, Halifax, Yorks, the wife of Arthur Drury, M.B., C.M. Edin., of a daughter.

EMERSON.—On July 3rd, at The Nook, Oulton Broad, the wife of P. H. Emerson, B.A., M.B. Cantab., of a son (Ralf Billing).

MATHESON.—On July 3rd, at Gibson-square, N., the wife of John Matheson, M.A., M.D., of a daughter.

SMITH.—On June 28th, at Eltham, Kent, the wife of H. Sandford Smith, M.R.C.S., of a son.

WALLIS.—On July 2nd, at Old Stone House, East Grinstead, the wife of P. E. Wallis, L.R.C.P., of a daughter.

MARRIAGES.

BAKER—WALLIS.—On July 1st., at St. Michael's, Basingstoke, by the Rev. E. F. Russell, M.A., Assistant Priest of St. Albans', Holborn, assisted by the Rev. H. R. Cooper Smith, D.D., vicar of the parish, John Charles Baker, M.B., B.A. Lond., M.R.C.S., L.R.C.P., of Witley, Surrey, to Charlotte Sterry, eldest daughter of Arthur Wallis, J.P., of Coombehurst, Basingstoke.

BOND—WRINCH.—On June 30th, at All Saints' Church, Ipswich, Bertram William Bond, M.B., B.S., of Godalming, to Elsie Kate, younger daughter of Alderman Alfred Wrinch, J.P., of Ipswich.

COOKE—CLARKE.—On June 30th, at Christ Church, North Kensington, Frederick Arthur Cooke, M.D., M.R.C.S., son of John Cooke, M.B., F.R.C.S., of Tettenhall, Wolverhampton, to Stella Mary, daughter of the Rev. E. Wrangles Clarke, B.A., Vicar of Christ Church, North Kensington.

DOUGLAS—FISHER.—On July 5th, at the parish church, Rowsley, Derbyshire, Archibald Robertson Douglas, L.R.C.P., L.R.C.S., H.M. Prison, Portland, to Ada, daughter of the late Frederick Fitz-Henry Fisher, of Camden-road.

FAIRRIE—FISHER.—On July 6th, at St. John's Church, Stratford, Essex, Septimus Harold Fairrie, Army Medical Staff, son of James Fairrie, The Cedars, Hoole, Chester, to Florence, daughter of the late Thomas Fisher, of Maldon House, Romford-road, Stratford, Essex.

HALL—OLIVER.—On July 1st, at St. Paul's Church, Finchley, by the Rev. S. B. Mayall, James Arthur Thomas Hall, L.R.C.P., L.R.C.S., of Hinckley, Leicestershire, third son of the late Christopher Hall, M.D., of Swadlincote, Derbyshire, to May Maud, only daughter of Henry Oliver, of Alexandra Grove, North Finchley, Middlesex.

HOWDEN—CAMPBELL.—On June 30th, at St. Thomas's Episcopal Church, Edinburgh, Ian Howden, M.B., Dover, to Violet, youngest daughter of the late Lieutenant-Colonel J. P. Campbell, 72nd Highlanders.

HUTCHINSON—LINNELL.—On July 3rd, at St. Nicholas's, Potters Pury, Jonathan Hutchinson, F.R.C.S., eldest son of Jonathan Hutchinson, F.R.S., to Caroline, second daughter of the late James Edward Linnell, of Potters Pury.

JONES—CROSLAND.—On June 30th, at St. Luke's Church, Southport, Arthur Jones, L.R.C.P. Edin., M.R.C.S., of Hoghton-street, Southport, to Helen Maud, widow of George Crosland, of Huddersfield.

THOMPSON—GOWANS.—On June 30th, at St. Cuthbert's Church, Edinburgh, Charles Gurney Thompson, M.B., C.M., only son of Charles H. Thompson, Oatlands, Norwood, to Ellen Chisholm (Nelly), youngest daughter of the late Sir James Gowans.

THOMSON—ROSENBERG.—On June 29th, at St. Augustine's, Queen's-gate, A. E. Thomson, B.A., M.B., of East Molesey, to Maude, only daughter of the late F. Rosenberg, Queen's-gate-gardens, S.W.

WHITE—NEWINGTON.—On July 1st, at Ticehurst, William Robert White, M.D., of Benenden, Kent, to Ethel Dora Oakeley, youngest daughter of the late Samuel Newington, M.D., of Ridgeway, Ticehurst.

DEATHS.

BULTEEL.—On June 30th Christopher Bulteel, F.R.C.S., of Jennicombe, Tiverton, and formerly of East Stonehouse, Devon, aged 66 years.

CHANCE.—On July 1st, Frank Chance, M.B., F.R.C.P., of Burleigh House, Sydenham-hill, S.E., aged 71.

CUTTS.—On July 3rd, at London, Wm. Henry Cutts, M.D., J.P., of Melbourne, Victoria, in his 69th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 8th, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min Temp	Rainfall.	Remarks at 8.30 A.M.
July 2	30·11	E.	61	59	76	65	49	...	Overcast
,, 3	29·99	S.W.	63	59	114	75	59	...	Cloudy
,, 4	30·09	N.W.	64	54	116	70	55	...	Cloudy
,, 5	29·89	W.	64	59	128	77	54	0·02	Cloudy
,, 6	29·72	S.W.	61	60	121	75	60	...	Cloudy
,, 7	29·76	WNW	60	52	124	71	55	...	Cloudy
,, 8	29·96	S.W.	60	53	115	70	52	...	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (17th).—Royal Free (9 A.M. and 2 P.M.), Middlesex, (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (12th).—SOCIETY FOR THE STUDY OF INEBRIETY (Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W.).—4 P.M. Paper: Mr. J. J. Pitcairn: Alcoholism and the Penal Law in Europe and the U.S.A.

FRIDAY (16th).—BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION (Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W.).—3 P.M. Annual General Meeting. Cases:—Dr. Stokes: Oxygen Cure of Ozæna and Otitis Media Suppurativa.—Dr. Milligan: Nasal Exostosis.—Mr. Bark: Epithelioma of Vocal Cord.—Mr. L. Browne: Epithelioma of Soft Palate.—Dr. Law: Lupus of Nose. Dr. Grant, Dr. Whistler, Mr. Mayo Collier and others will also show cases. 5 P.M. Discussion on Preliminary Training and Methods of Operating on Laryngeal Growths per *vias naturales*.

LECTURES, ADDRESSES, DEMONSTRATIONS, ETC.

TUESDAY (13th).—ST. GEORGE'S HOSPITAL MEDICAL SCHOOL (Hyde-park-corner, S.W.).—5 P.M. Dr. P. Manson: Diseases of Tropical Climates.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Mr. Horsley: Clinical Demonstration.

WEDNESDAY (14th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Aldren Turner: Neurological Cases.

THURSDAY (15th).—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square).—5.30 P.M. Dr. J. Vinrace: Alopecia.

FRIDAY (16th).—ST. GEORGE'S HOSPITAL MEDICAL SCHOOL (Hyde-park-corner, S.W.).—5 P.M. Dr. P. Manson: Diseases of Tropical Climates.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Mr. Ballance: Surgery of the Nervous System.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1897, which was completed with the issue of June 26th, was given in the last number of THE LANCET. It is intended, in future, to include the Index and Title page for each past half-yearly volume in the first number of the succeeding volume, as in the present case, instead of in the last number of the volume itself, as heretofore.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1897 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

A NEW DEPARTURE AT AN INQUEST.

AN inquest was recently held at the Hove Town Hall relative to the death of a man named Jackson, who was found dead in a garden outhouse. There was nothing remarkable about the case, death being due to the rupture of an aneurysm of the first part of the aorta; but what we do think worthy of notice is that the medical man who gave evidence is reported as "having the heart produced and practically demonstrating to the jury the exact nature of the injury." We take it that this is a new departure and not one to be followed. Possibly in the future we may see the jury invited to attend the post-mortem examination and being duly edified by the medical man addressing them as follows:—"You will observe, gentlemen, that the deceased suffered from a new growth of the pancreas; the growth is carcinomatous in nature and has eroded the cœliac axis, thus giving rise to a sudden hæmorrhage, which proved fatal." From showing pathological specimens at an inquest to such a procedure as we have endeavoured to indicate above is but a short step, and we hope that the pathological demonstration will not be repeated.

Mr. S. Scott is recommended to make enquiry of the family practitioner.

AN ARTIFICIAL LARYNX.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers inform me who are the makers of an artificial larynx, with cardboard discs simulating diseases, for laryngoscopic practice, also an artificial fundus for ophthalmoscopy?

I am, Sirs, yours faithfully,

July 1st, 1897. MAGGIORE.

DR. STEELE'S JUBILEE ODE.

AT the request of some of our readers we append a literal translation of Dr. Steele's Jubilee Ode which appeared in THE LANCET of June 19th:—"From what source the British people derive their moral worth and the lustre of their empire, tell us, oh, Muse, who surveyest the world from the rising of the sun to his western decline, who hast skill to burst the barrier of time and to disclose the humble beginnings of our power, when the Silurians were bound with Roman fetters and their chief, Caractacus, before the tribunal of the Emperor Claudius, gave utterance to the prophecy: 'Not for ever will the haughty sway of the Romans endure; not for ever will Father Jove from his lofty shrine, or Mars the Avenger, provide for the City; four centuries will glide away and the Mistress of the World will collapse before the barbarians of the North. For Ulysses, having threaded the Pillars of Hercules on his last voyage to see the Islands of the Blest, was carried out of his course to the British strand, and there, having found a kindly host in the chief, after recruiting himself and his crew, he again put to sea, gratefully leaving behind him a forecast of the blessings in store for our Albion, which, he said, would one day be the mother of high-souled heroes, rich in a twofold empire, and continuing to subjugate lands and seas withheld from the Romans, until, lifted higher by their ruins, she would reign supreme—a QUEEN upheld by a purer faith, an EMPRESS formed to play a mightier part than Cæsar's." This prophecy, borne by the Ithacan king to the Britons, delivered by Caractacus to an all incredulous Rome, how tested it has been, how thoroughly fulfilled, let the world declare; let peace and civilisation, with their triumphs, declare, and freedom won for the people in harmony with law, and religion the boon mother of salvation; let art declare, and the gifts dear to the Muses, as shown in the animation given to marble, in the eloquence given to painted canvas, in the inspiration given to the printed page; let the far-seeing statutes of a fatherly senate declare, and courts of justice equitable to the humblest of the accused, and the reverend order of the priesthood, loyal in its allegiance to the Cross. Nor, amid so many witnesses, let the confirmation of Æsculapius be withheld—Æsculapius, a soldier fighting a battle of his own and winning trophies denied to military leaders; Æsculapius, who, when charged with the interests of the State, strengthens its resisting power till epidemic disease and its agents drawn up for battle are put to the rout, giving back even before the trumpet sound; Æsculapius, who with the balm that by evaporation confers unconsciousness, lulls to sleep the patient, thus exempting him from dread of Machaon's inexorable knife and salutary severity; Æsculapius who, a nature-student, daring yet reverential, knows how to penetrate the sanctuary of life hitherto veiled from the uninitiated gaze; who knows in its intimate recesses, to surprise Disease, like the sleeping Proteus, who will presently reveal his strategy, the weapons he has mocked, the weapons he has come to fear; from which revelation there is derived for us a habit and rule of life ever more conducing to health and to the development of the race and the family alike, until we are renewed into a yet mightier generation and are carried up again into the Golden Age. Thrice-propitious monarch, descended from so long a line of kings, VICTORIA! vouchsafed to the world, like a returned Astræa, and destined to be enrolled among the celestials; late be thy departure from thy foster-children! For, under thy providential sway ever more present, our good fortune will flow down in yet ampler volume, wafting us to that goal which is the aspiration of all pious natures, who, when once they have reached it, will behold Islands Blest in a truer sense that those beheld by the errant Hercules when he dared, across the Atlantic, to seize and carry off the golden fruit."

H. W. (Talgarth).—We agree that the information must have been sent to the paper by some one who knew, but it did not emanate necessarily from the person mentioned. Indiscreet friends generally make these communications.

"PELLAGRA?"

To the Editors of THE LANCET.

SIRS,—I venture to reply to "Vagamundo's" query from Crete in THE LANCET of July 3rd because I have had the opportunity of treating some 400 cases of pellagra in Cairo, and of studying the disease in Italy. The site of the eruption is suggestive of pellagra, but the "apertures filled with hard yellowish matter" are sufficient to negative that diagnosis. Pellagrous eruptions usually remind one of symmetrical trophic erythema, psoriasis, or ichthyosis, but pellagra should be diagnosed not only by its skin manifestations, but by diarrhœa, denuded epithelium of tongue, changes in patellar reflex, and tenderness of spinal nerves. The disease is not likely to be present in small children unless distributed among adult peasants in the island. Pellagra exists at Corfu and very probably also in Crete, for the peasants there live partly on maize.

I am, Sirs, yours truly,

Savile Club, W., July 7th, 1897. F. M. SANDWITH, M.D.

ECCENTRICITIES OF SUICIDE.

THE *Evening Standard* in a recent number had an interesting article under the above heading, appropriate to the time of year when, contrary to general opinion, the suicide curve rises. The selfishness of suicides is remarkable and is instanced by the case of a man who committed suicide in the classical way by opening his veins in a bath, a Turkish bath in this case. His thoughtless act ruined the proprietor, for the story got about and no one would use the baths afterwards. Perhaps the most eccentric method of attempted suicide was one which occurred in London not so very long ago. The would be self-murderer filled his mouth with gunpowder, so full that he could not shut it, and then inserted a lighted match. Instead, however, of his head being blown off, as he had hoped, the powder simply blazed out of his mouth, severely burning his lips, and having chosen the neighbourhood of a hospital for his experiment he was at once conveyed thither and treated with success. A somewhat similar instance happened a few years ago when a miner put a dynamite cartridge in his mouth, but in this instance his head was shattered to pieces.

Aphasia has omitted to supply us with his name and address. This proceeding is in keeping with the pseudonym which he has adopted, but we cannot respect his infirmity so far as to excuse the omission.

THE ADMINISTRATION OF CHLOROFORM.

To the Editors of THE LANCET.

SIRS,—Would you kindly ask the profession for information in your widely read journal if any of them have experienced, seen, or heard of any ill effect having followed the use of inhaled pure chloroform, administered, on Snow's method, by means of the regulating inhaler? Over 1000 of these inhalers having been distributed over many different parts of the world, some of which may probably have been employed daily since 1889-1890, it would greatly enhance the value of the information if each correspondent would also give the number of cases in which the inhaler was employed and the amount of chloroform used on an average per minute.

We are, Sirs, yours faithfully,

July 6th, 1897. KROHNE AND SESEMANN.

F.R.C.S., M.R.C.P.—We have been unable to decipher our correspondent's signature.

THE TREATMENT OF URETHRAL STRICTURE BY ELECTROLYSIS.

WE have received a paper by Dr. Ramon Guiteras, Professor of Anatomy and Operative Surgery at the Post-graduate Hospital of New York, upon the subject of the electrolysis of urethral strictures. There is, of course, nothing new in the main treatment, for electrolysis for this condition was practised so far back as 1839 by Crussell, more systematically by Mallez and Tripier in 1867, and comparatively recently by Steavenson and Bruce Clarke in 1886. One new point about Dr. Guiteras' method is, however, the use of an electrode modelled on a Maisonneuve urethrotome, the knife being made of platinum and blunt, so that in use the instrument passes through the stricture before the current is turned on. This method, of course, implies that the stricture is not impassable, and in cases where the obstruction is impassable we do not see that Dr. Guiteras' method has any advantages over the common electrode used by Steavenson and Bruce Clarke.

Practice in Jersey.—According to the definitions given in the Medical Act, 1886, "the expression British possessions means any part of Her Majesty's dominions exclusive of the United Kingdom, but inclusive of the Isle of Man and the Channel Islands."

During the week marked copies of the following newspapers have been received:—*Blackburn Standard, Le Temps (Paris), Hull News, Birmingham Gazette, Baillie, Dover Express, Newcastle Leader, Harrogate Advertiser, Sheffield Independent, Oxford Journal, Southport Visitor, Accrington Observer, Barnsby Chronicle, Liverpool Daily Post, Alnwick Guardian, Times of India, Pioneer Mail, Oban Times, Architect, Goole Times, Yarmouth Advertiser, Folkestone Chronicle, Carnarvon Herald, Salisbury Journal, Bedford Standard, Builder, Wolverhampton Chronicle, Yorkshire Post, Western Morning News, Dundee Courier, Observer and Chronicle (Bournemouth), Hastings Times, Leeds Mercury, Stroud News, Doncaster Chronicle, Woking Mail, Essex County Chronicle, Manchester Courier, Maryport News, Halifax Guardian, Bristol Mercury, Worcestershire Chronicle, Rugby Advertiser, Southampton Observer, Midland Free Press, Leicester Post, Sussex Daily News, Cambrian, Devon Weekly Times, Kent Messenger, Chatham News, Carlisle Journal, Hampshire Telegraph, Tyrone Constitution, Brighton Gazette, Weekly Free Press and Aberdeen Herald, Mining Journal, Hertfordshire Mercury, City Press, Christian World, Reading Mercury, Local Government Chronicle, Blackburn Times, Daily Express (Dublin), Bradford Observer, Surrey Advertiser, Local Government Journal, Norfolk West Standard, Norwood Weekly Herald, Cape Times, West Middlesex Herald, Weekly Times and Echo, Forfar Herald, Devizes and Wiltshire Gazette, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Messrs. Armour and Co., Lond.; Mr. H. Astley, Portobello; Mr. W. Adams, Lond.

B.—Dr. M. Bannister, Blackburn; Miss A. M. Browne, Lond.; Miss Margaret Bream, Fleet; Birkbeck Bank, Manager of; Messrs. Burgoyne, Burbidges, and Co., Lond.; Dr. D. Bower, Bedford; Mr. M. H. Bulteel, Tiverton; Dr. Adolph Bronner, Bradford; Dr. W. J. Bond, Brill; Dr. Bottentuit, Plombières, France; Messrs. Blondeau et Cie, Lond.; Messrs. W. H. Bailey and Son, Lond.; Dr. D. Bombardieri, Naples; Mr. J. Baynham, Cotham; Birmingham General Hospital, Secretary of; Mr. R. Baker, Lond.; Brin's Oxygen Co., Lond.; Messrs. Burroughs, Wellcome and Co., Lond.; Dr. L. Bennett, Lond.; Mr. R. J. Beevor, Lond.; Dr. Bury, Manchester; Mr. W. M. Beaumont, Bath.

C.—Mr. H. Chance, Lond.; Cambridge Medical Graduates' Club, Secretary of; Mr. J. Colston, Cambridge; Dr. Casper, Berlin; Chorlton Union, Clerk of, Cantab, Lond.; Messrs. Cassell and Co., Lond.; Chelsea Hospital for Women, Secretary of; Messrs. E. Cook and Co., Lond.; Mr. W. F. Clay, Edinburgh; Mr. W. Carnie, Aberdeen; C. J., Lond.; Mr. T. Cooke, Lond.

D.—Mr. J. M. Dunn, Lond; Messrs. Deighton, Bell, and Co., Cambridge; District Asylum, Mullingar, Acting Medical Superintendent of; Messrs. W. Dawson and Sons, Lond.; Messrs. Duncan, Flockhart, and Co., Edinburgh.

F.—Dr. J. L. Firth, Bristol; Mr. W. T. Freeman, Lond.; Messrs. Ferris and Co., Bristol; Mr. J. Flannery, New York; Dr. J. A. Fort, Paris; Mr. H. Frowde, Lond.

G.—Mr. R. H. Goldie, Rochester; Mr. J. Galpin, Lond.; Grimsby News Co., Lond.; Dr. H. L. Gill, Brooklyn, N.Y.; Messrs. Gordon and Gotch, Lond.; Mr. J. P. Grieves, Lond.; Mr. F. N. Glew, Lond.; Gartlock Asylum, Medical Superintendent of; Great Eastern Railway Co., Lond., Manager of.

H.—Mr. G. R. Hatton, Fleet; Messrs. Harvey and Co., Halifax; Mr. C. M. Holloway, Lond.; Dr. G. B. Hindley, Benenden; Messrs. Hertz and Collingwood, Lond.; Mr. J. Heywood, Manchester; Mr. T. J. P. Hartigan, East Grinstead.

I.—Iowa State Medical Society, Des Moines; *Il Policlinico*, Rome, Editor of; Income Tax Adjustment Agency, Lond.

K.—Messrs. Krohne and Sesemann, Lond.; Mr. B. Kühn, Lond.

L.—Mr. F. Harwood Lescher, Lond; Dr. B. H. F. Leuman, Bombay; Mr. H. K. Lewis, Lond.; Dr. L. Leibster, Lond.; Leeds General Infirmary, Secretary of.

M.—Mr. E. L. Munson, Montana; Maltine Manufacturing Co., Lond.; Mr. C. M. Mulveeny, Birmingham; Memorial Hospital, Jarrow on-Tyne, Secretary of; Rev. J. W. Morris, Shooters's Hill; Messrs. Mullock and Sons, Newport, Mon.; Dr. J. M. Martin; Brighton; Macclesfield General Infirmary, Secretary of; Messrs. J. and C. Mort, Stafford; Mr. R. T. Morgan, Clevedon; Metropolitan Asylums Board, Sec. of.

N.—North Wales Couties Asylum, Denbigh, Steward of; Committee of the National Conference of Friendly Societies, Secretary of; National Dental Hospital, Lond., Secretary of; Dr. James Niven, Manchester.

O.—Dr. C. M. O'Brien, Dublin.

P.—Mr. A. E. Pearson, Lond.; Mr. S. Pearson, Birkenhead; Dr. R. Padró y Almeida, Spain; Messrs. Perken, Son, and Rayment, Lond.

R.—Dr. R. R. Rentoul, Liverpool; Royal College of Veterinary Surgeons, Lond., Secretary of; Messrs. Ross and Co., Lond.; Dr. G. A. Reid, Southsea; Mr. W. B. Rotheroe, Lond.; Rotherham Hospital, Secretary of; Royal Albert Hospital, Devonport, Secretary of; Messrs. J. Richardson and Co., Leicester; Mr. W. A. Crawford Roe, Punjab.

S.—Mr. W. H. Stevens, Taunton; The Scientific Press, Lond.; Mr. G. Stoker, Lond.; Mr. S. Stretton, Kidderminster; Mr. W. P. Stocks, Salford; Messrs. W. Scott and Co., Rock Ferry; Mr. W. P. Sutton, Nottingham; Messrs. Street and Co., Lond.; Messrs. J. Smith and Co., Lond.; Mr. H. Sell, Lond.; Dr. W. K. Sibley, Lond.

T.—Dr. J. C. Thresh, Chelmsford; Messrs. Harper Twelvetrees, Ltd., Lond., Secretary of; Mr. L. A. Tallerman, Lond.; Dr. A. Thomson, Oxford; Mr. K. Tallerman, Lond.; Terröl Co., Lond.

U.—Unwin, Lond.

V.—Vaccine Lymph Association, Lond., Secretary of.

W.—Mr. W. Walters, Blackburn; Westminster Palace Hotel, Lond., Secretary of; Mr J. J. Weaver, Southport; Mr. A. P. Walters, Tilt Cove, N F.; Dr. E. Walford, Cardiff; Dr. F. Parkes Weber, Lond.; Messrs. W. M. Wills and Co., Lond.; Mr. J. Willing, jun., Lond.; Westray Parish Council, Clerk of; Mr. A. Winterbottom, Swinton; Mr. H. Williams, Breconshire.

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